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Canada Royal Commission on
Employment of personnel on
diesel locomotives in freight
and yard service on the
Canadian Pacific Railway
Proceedings

1947 no 31-33



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**ROYAL COMMISSION ON EMPLOYMENT OF FIREMEN
ON DIESEL LOCOMOTIVES IN FREIGHT AND YARD
SERVICE ON THE CANADIAN PACIFIC RAILWAY**

31-33

16

PROCEEDINGS



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VOLUME: 31

E. L. FEATHERSTON
SHORTHAND REPORTER
241 MANOR AVENUE
ROCKCLIFFE PARK
OTTAWA, CANADA

Chairman

- A -

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 6

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
✓ 718	14	regular	rugged
✓ 724	19	large pushers	pushers
✓ 755	7	Mount Haven	Mott Haven
✓ 755	14	Mount Haven	Mott Haven
✓ 757	9	Mount Haven	the New Haven
✓ 758	25	man	manual
✓ 761	1-2	including that industrial switching yard	including in that industrial switching yards

Volume 7

✓ 801	25	January 1, 1950	June 1, 1950
✓ 811	18	knocked down	not down

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 10

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
1233	13	the sorting yard	Sortin Yard
1240	28	Delivery Truck	Delivery Track
1240	29	Delivery Truck	Delivery Track
1243	16	7000 Horse Power	1000 horsepower
1244	4	N-4	M-4
1244	26	St. Paul	Cote St. Paul
1244	27	St. Paul	Cote St. Paul
1256	9	Adenda	Agenda
1268	9	1500	6500
1277	3	stops	moves
1277	4	stops	moves
1277	8	we were to release them	we relay signal
1278	15	Montreal	Imperial
1283	22	following	follower
1284	3	push	proceed
1285	14	They left A	They left C
1285	17	the ground	on the ground
1285	19	following the movement	following the train
1286	17	The fireman was	The fieldman was
1287	27	Pick up signal	Back up signal
1289	29	Starts to pick up	starts to back up
1289		page 2189	1289
1290	11	so we shoot	so we push
1291	28	mile End and T. yard	mile End Team Yard

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 11

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
- 1305	24	The engine follower on the engine	The Yard Foreman and
- 1305	25	and the engineer	the field man
- 1314	18	Anything	the rules
- 1320	2	Lewis	Lefrancois
- 1322	3	it is not necessary for the ground crew is	it was not necessary because the ground crew was
- 1322	26	Working car first	working cab first
- 1322	28	in a little yard	and in a small yard
- 1325	3	car first	cab first
- 1325	4	car to the west	cab to the west
- 1326	12	The fireman on the rear	The yard foreman on the rear
- 1328	5	With the car coupled up	with the air coupled up
- 1328	6	couple	coupled
- 1328	18	and the fireman took	and the yard fore- man took
- 1330	16	Two, Three of four cars	Two, three or four cars
- 1331	10	The foreman	The fireman
- 1333	17	Instructing	instructed
- 1341	9-10	the let the red lamp	he lit the red lamp
- 1354	19	Cote St. Luc	Cote St. Paul
- 1355	29	Engineer	Engine follower
- 1356	23	he did flag	he did signal
- 1364	24	3579	3700
- 1365	9	Discipline	investigation
- 1368	29	Switch	stop

Volume 11 (cont'd)

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
- 1396	8	posed	supposed
- 1398	12	guards	yards
- 1416	26	our	a
- 1419	4	flying	flagging
- 1428	3	passenger	passed

Volume 12

- 1521	20	Bleury	Berie
- 1533	20	Metropolitan	Montreal
- 1538	14	flat	flagged
- 1539	8	fireman	flagman

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 13

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
-1622	5	in a condition	in some conditions
✓ 1626	23	Superintendent	General Yardmaster
✓ 1627	1	Superintendent	General Yardmaster
✓ 1632	1	man by that is pushing	mean by that is pulling
✓ 1644	3	mass signals	mast signals
✓ 1710	13	slipped on his coat	slipped his coat
✓ 1703	25-26	A. But I am instructed that as a daily matter now he does not stop. Q. The	but I am instructed that as a daily matter now he does not stop. The

Volume 14

✓ 1883	25	between Cambrai and	between Canpa and
--------	----	---------------------	-------------------

Volume 15

✓ 1948	2	out of the cars there into	onto the cars there in
✓ 1948	5	the car in	the air in
- 1956	13	cab first	engine first
✓ 1967	21	leaving cars follow	leaving cars foul

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 22

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
✓ 2990	20	the engineman	the trainman
✓ 2993	16	the engine off	the train off
✓ 2998	19	it fits the	it hits the

Volume 23

✓ 3006	12	in proper position	in proper condition
- 3021	21	get clear and	get cleared and
- 3035	18	Fecilon	Thessalon
- 3036	21	fuel oil feeder	fill oil feeder
- 3036	25	Fuel oil feeder	fill oil feeder
- 3037	21	Rear _____	Rear car
- 3004	4	Road train orders	read train orders
- 3045	17	station and MacTier	station at MacTier
- 3046	24	back track to	back track at
- 3069	21	detention or wait	detention and wait
✓ 3072	17	got into clearance	got into clear

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 24

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
✓ 3104	6-7	power over, the	power off the
✓ 3106	13-14	some other cars	some other cause
✓ 3106	15	was on other cars	was another cause, pigtails
✓ 3123	17	cab, wagging train 447	cab, flagging train 447
✓ 3124	8	the back seat	the front seat
✓ 3124	9	the front seat	the back seat
✓ 3124	25-26	at Benthier and	at Berthier and
✓ 3126	8	the car	the cab
✓ 3137	11	Three locomotive engineers	the locomotive engineers
✓ 3138	22	pump, just	pump stops, just
✓ 3140	8	the engine just	the engineer just
✓ 3141	11-12	set out to	set up to

Volume 25

✓ 3423	10	glasses up periodically	glass out periodically
--------	----	----------------------------	------------------------

Volume 26

✓ 3433	12	for that hill	for the hill
✓ 3435	3	putting down the water glass mountains	blowing down the water glass mountings
✓ 3457	19	a portion, and	with caution, and
✓ 3472	2	I start on	I started on
✓ 3472	23	a class man	a classed man
✓ 3472	25	a class man	a classed man
✓ 3472	27	a class man	a classed man

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Exam. by Mr. Sinclair	4330

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ROYAL COMMISSION ON EMPLOYMENT OF
FIREMEN ON DIESEL LOCOMOTIVES IN
FREIGHT AND YARD SERVICE ON THE
CANADIAN PACIFIC RAILWAY

Proceedings of public
hearing held at Ottawa,
Ontario, Monday, May 6,
1957

PRESENT:

Hon. R. L. Kellock,	Chairman
Hon. C. C. McLaurin,	Member
Hon. Jean Martineau,	Member
Douglas M. Fraser,	Secretary
A. R. Winship,	Asst. Secretary

APPEARANCES:

D. W. Mundell, Q.C., C. J. A. Hughes, Q.C.,	Representing the Commission
I. D. Sinclair, Allan Findlay,	Representing the Canadian Pacific Railway Company
David Lewis,	Representing the Brotherhood of Locomotive Firemen and Enginemen

Monday,
May 6, 1957.

31st DAY

MORNING SESSION

----The Commission opened at 10.00 a.m.

MR. SINCLAIR: Mr. Chairman, before I call my next witness there are a number of matters that were outstanding in the transcript that might be cleaned up now. Mr. Lewis, in Volume 2, pages 210 and 211, requested an inventory of diesel yard switchers from the time modern power in yards was acquired first in 1943 up until the time of the diesel rule, which was signed at the end of 1948 to be effective January 1, 1949. I would like to have that statement, with the note dealing with assignments in connection with those diesels, filed as Exhibit 166.

EXHIBIT No. 166 -- Inventory of diesel
yard switchers,
1943-48.

MR. SINCLAIR: Then as Exhibit 167 I should like to file a memorandum which I prepared setting out the various types of steam locomotives, road and freight, and diesel-electric locomotives, car body, road switchers and yard switchers; and diesel-hydraulic locomotives in the Canadian Pacific. This was requested by you, Mr. Chairman, at Volume 24, page 3147.

EXHIBIT No. 167 -- Locomotives
acquired by
C.P.R.

MR. SINCLAIR: The first column shows the series number and the number made would be indicated, in the case of the first item, by the numbers 417 to 492. That would indicate the number of D-4 engines which had been built and

put in service. Subsequently through the various series the same would apply, that is D-5, D-10, or whatever it happens to be; G-3 and K-1 and so on. That is the information with regard to road steam locomotives.

Then when you come to yard steam locomotives the same information is set out.

But when you come to diesels, the only class or type of unit that we show is the Trainmaster, which is the designation given to the 8900 type of diesel. We do not have various classes of diesel other than car body, road switcher and yard switcher.

THE CHAIRMAN: I do not follow you when you said something about the number that remained.

MR. SINCLAIR: If you subtract 417 from 492 you would find how many of that type of locomotive had been in service and whether they had been destroyed or retired or broken up. In the case of the D-5 you will note that the last column indicates they are not now in service.

THE CHAIRMAN: Does this exhibit indicate the number of these various types of engines which are still in service?

MR. SINCLAIR: No, sir. Then as Exhibit 147 I was to file -- a number was given to this -- at the request of Mr. Lewis the mechanical examinations for locomotive

enginemen, firemen and helpers. This contains the flyleaf, the preamble and is a form known as MP-505.

HON. MR. McLAURIN: Is this a supplement to Exhibit 147? We have a piece of paper marked as Exhibit 147 now, have we not?

MR. SINCLAIR: I think Mr. Lewis may have handed a copy of this to the Secretary.

MR. LEWIS: I handed in a booklet.

MR. SINCLAIR: I was to provide copies for all the parties.

MR. SINCLAIR: Then as Exhibit 168 I should like to file a memorandum by the company which was prepared at the request of Mr. Lewis at Volume 27, pages 3670-1. This is a record of the number of firemen hired on the Canadian Pacific during the four-year period April 1, 1953, to March 31, 1957, under the classifications similar to the information filed when Mr. Leo O'Brien was on the stand. This information covers three regions of the Canadian Pacific Railway and gives the total number of firemen hired, their background in so far as their relationship to railroad work or not prior to their becoming firemen. It covers the entire system.

MR. LEWIS: What was the exhibit filed by Mr. O'Brien?

MR. SINCLAIR: Exhibit 142. Then in connection with Exhibit 146, which was a trip report of the witness McClean at pages 3642 and 3643 of Volume 27. Mr. Lewis asked that a check be made of the trip reports to show how the mileage on those trip reports was calculated. That has been done, and all the mileages of Mr. McClean's trip reports are from the yard at the initial terminal to the yard at the final terminal with the exception of those on pages 32 and 33 of Exhibit 146 which are from the outer main track switch to the outer main track switch.

When Mr. Gonder was on the stand I was asked to supply, and he has supplied me, with the progressive mechanical examinations of the Canadian National. Those were given the number Exhibit 162.

EXHIBIT No. 162 -- Progressive
mechanical
examinations,
Canadian
National
Railways.

MR. SINCLAIR: Then also when Mr. Gonder was on the stand, at Volume 30, page 4208, during his cross-examination by Mr. Lewis a request was made for him to check the crew assignments on the Thousand Islands Railway between Gananoque and Gananoque Junction.

I should like to file as Exhibit 169 a letter which he wrote me dated April 29, 1957, in which he deals with that situation.

EXHIBIT No. 169 -- Letter,
April 29, 1957,
Mr. Gonder to
Mr. Sinclair.

MR. SINCLAIR: Then as Exhibits 170A, 170B, 170C and 170D I should like to file -- this has reference to the time when Mr. Kiley of the Milwaukee Road was on the stand -- photographs of certain electric locomotives.

Exhibit 170A is a photograph of a Class E.P.2 electric passenger locomotive.

Exhibit 170B is a photograph of a three-unit Class E.F.1 electric freight locomotive.

Exhibit 170C is a photograph of a Class E.P.1 electric passenger locomotive, manufactured in 1916 and still in service.

Exhibit 170D is a Class E.F.4 and Class E.P.4, which is a dual-purpose freight-passenger electric locomotive.

Various data concerning these different locomotives will be found on the back of each photograph.

EXHIBIT No. 170A -- Photograph of
Class E.P.2
electric passenger locomotive.

EXHIBIT No. 170B -- Photograph of three-unit Class E.F.1 electric freight locomotive.

EXHIBIT No. 170C -- Photograph of Class E.P.1 electric passenger locomotive.

EXHIBIT No. 170D -- Photograph of Class E.F.4 and E.P.4, dual-purpose freight-passenger locomotive.

MR. SINCLAIR: As Exhibit 171 I should like to file a photograph of a locomotive used by the Chicago South Shore and South Bend Railroad. You will recall that Mr. Kiley spoke about this being similar to the type used on the Milwaukee Road. It is the same locomotive as is shown in Exhibit 170D. You will recall that Mr. Kiley said that these locomotives were built by General Electric for the Russians and were made available, with I suppose some modifications on account of the gauge, to American railroads. The Milwaukee Road took most of them and the Chicago South Shore and South Bend Railroad took three.

EXHIBIT No. 171 -- Photograph of electric locomotive, South Shore line.

MR. SINCLAIR: The photograph, Exhibit 171, is one of those three. You will recall that Mr. Lewis was kind enough when he

was dealing with the crew assignments on these locomotives in freight service, shown on Exhibit 171 on the South Shore Line, that he said there was one man in the cab.

MR. LEWIS: My learned friend is in an appreciative mood this morning.

MR. SINCLAIR: Then when Mr. Lawrence was on the stand, and I refer to Volume 29, page 4066, some information was requested which I should like to file now as Exhibit 172. This was requested by Mr. Lewis. It is a copy of the system bulletin of the Santa Fe regarding the matter of crossing over couplers on road switchers while in motion.

EXHIBIT No. 172 -- Bulletin
No. 13, Santa
Fe Railway.

MR. SINCLAIR: Exhibit 172 shows the actual wording of the bulletin dated January 1, 1957. The note on the lower part of the page shows that this bulletin was first issued on June 12, 1953, and reissued the first of each year subsequently.

With the exception of three matters which are in hand and with which I am having substantial difficulty completing -- I shall get them done as soon as I can and if I cannot I will discuss it with my friend -- I hope to complete all the outstanding matters as far as my check of the record shows.

The next witness which I would like
to call with your permission is Francis Victor
Hooley.

--

--

--

FRANCIS VICTOR HOOLEY, sworn, examined

BY MR. SINCLAIR:

Q Mr. Hooley, your present occupation is road foreman of engines with the Canadian Pacific, with headquarters at Vancouver, British Columbia?

A Yes, sir.

Q You first entered the service of the Canadian Pacific in 1920 at Revelstoke as a hostler's helper and spare fireman and you did this work until you were set up as a fireman in 1924. You were employed as a fireman until July, 1926, and from that date until November¹⁹²⁹, you worked continuously as a spare and regular pool fireman at Revelstoke up until the advent of the depression in 1930 when you left Revelstoke for lack of work. You worked for short periods at Cranbrook, British Columbia, Kamloops, British Columbia, and Nelson, and for a two month period as a fireman on the pusher engine at Farron Hill, British Columbia?

A Yes, sir.

Q When that work as a fireman fell off you returned to Nelson as a wiper until the fall of 1934 when you went back to Revelstoke and fired for a short period and then exercised your seniority as a wiper at Revelstoke until the fall of 1939, not being able to stand for work as a fireman on account of the economic situation.

In 1939 you had a short period of firing

out of Cranbrook and in June, 1940, you returned to Revelstoke and worked as a spare fireman and regular fireman later until November, 1945, when you were first set up as a spare engineman?

A Yes, sir.

Q You worked as a spare engineman and sometimes as a fireman, latterly regularly as an engineman, and in 1947 you held a regular assignment as an engineman, first on the Mountain subdivision and then on the Shuswap subdivision until September, 1951, when you were first promoted to road foreman of engines. You were road foreman from September, 1951, until the end of May, 1952, when you then returned to your engine at Revelstoke on the Mountain subdivision for a couple of months, and then went back as road foreman of engines and stayed as road foreman of engines stationed at Revelstoke until February, 1953.

In that month, February, 1953, you were transferred to Vancouver first on a temporary basis and later on a permanent basis as road foreman of engines, headquarters Vancouver, and you have been the regular road foreman of engines on that territory since September of 1953?

A Yes, sir.

Q And your territory is the main line between Vancouver and Kamloops and from Ruby Creek to Midway?

Yes.

Q Which is known as the Kettle Valley route?

A Yes.

Q And you also, if necessary, go to Vancouver Island?

A Yes, sir.

Q When you were first employed as a fireman and working as a fireman, Mr. Hooley, what types of engines were you running with on the Mountain subdivision?

A When I first started they had R-3 engines, the 5700 class on the Mountain.

Q Did you ever fire any other types of engines?

A On the Shuswap I fired 3800's and 3600's. Those were hand-fired engines.

Q And later did you fire the T-1's, the 5900's?

A I fired the T-1's when they first came in 1929.

Q When they first came in 1929. Those earlier engines, the 3600's and the 3800's on the Shuswap subdivision -- that subdivision runs between Revelstoke and Kamloops, British Columbia?

A Yes, sir.

Q What kind of engines were they, stoker?

A They were all hand-fired engines at the time I was on.

Q And about how much coal would you use on a westbound trip?

A Westbound between Revelstoke and Kamloops you

would use from 12 to 14 tons of coal, and east-bound 15 to 17 tons.

Q When you were working on Farron Hill with the pushers, were they hand-fired or stoker-fired?

A They were hand-fired engines.

Q On that pusher job.

BY THE CHAIRMAN:

Q What types of pushers, what types of engines?

A The type of engine would be the 3600 on the pusher.

BY MR. SINCLAIR:

Q Was the job a heavy job?

A It was a heavy job. You would shovel lots of coal and in addition to the work of putting it in the fire box you had to rake it to break up the coke.

Q Were you ever a stoker fireman?

A Never.

Q Were you ever a fireman on an oil fired engine? You were because you had the 5900's.

A Yes.

Q And they were all oil fired?

A Yes.

Q What would be the time on a movement over the Mountain subdivision with the earlier types of power, the 5700's, the R-3's?

A With the earlier types --

Q Freight service?

A In freight service you would be from 9½ to 10 hours eastbound.

Q Pardon?

A That would be going east.

Q Yes?

A And coming west about nine hours.

Q And when the T-1's came along, the 89 per cent locomotives?

A They cut the time down over the Mountain division. Going east you would be approximately seven hours and around eight hours coming west.

Q What is the situation with the diesels on the Mountain --

A The situation with diesels on the Mountain --

Q As to time in freight service?

A You would go east with a full tonnage train in around seven hours.

Q Seven hours, about the same as a T-1?

A Approximately, yes.

Q And coming west ?

A Coming west you would be a little bit longer due to the track restrictions and inspection points.

BY THE CHAIRMAN:

Q What do you mean by track restrictions?

A Track restriction is the speed limits; through the mountains there is quite a few restrictions that restrict your speed down hills.

BY MR. SINCLAIR:

Q Now, eastbound with T-1's in freight service would you use pushers?

A Yes, you would use a pusher out of Revelstoke,

cut in next ahead of the van. This pusher would take you to Glacier. Both engines would stop and take water at Twin Butte. On your arrival at Glacier the head end would pull up to allow the pusher to be cut off. You then backed onto your van, made a brake test and left for Stoney Creek through the Connaught tunnel.

Q Through the Connaught tunnel and over to Stoney Creek.

A On your arrival at Stoney you would take water. Your trainmen would put up all your retainers.

Q What are retainers, Mr. Hooley?

A They are pressure retaining valves used to retard the release of your brake cylinder pressure to allow a recharge of your brake pipe from the engine.

Q And they were used on descending grades?

A They were used on descending grades, yes.

Q Where the grades were steep, where the grades were sharp?

A Where the grades were sharp you used this type of retainer to assist you down the hill and to keep your brake pipe fully charged.

Q Would there be one on each car?

A There would be one on each car.

Q Whether freight or passenger?

A Whether freight or passenger.

THE CHAIRMAN: I thought he said that



the pusher went to Stoney Creek.

THE WITNESS: No, no.

BY MR. SINCLAIR:

Q The pusher was cut off at Glacier?

A At Glacier.

Q And you ran with the one engine --

A One engine through the Connaught tunnel.

Q From Glacier to Stoney Creek?

A To Stoney Creek.

Q Where you stopped?

A Where we would stop and take water. The train crew would put up all the retainers at Stoney Creek. You then left Stoney Creek.

Q With one engine?

A With one engine, went down the hill to Rogers where a thermal test of your brakes was made and the retainers were put down.

Q A thermal test of your brakes; that is made by the train crew testing the heat of the wheels?

A The train crew go along and in addition to visually examining they will put their hand on the wheels to see if there is any excessive heat that might at some future date cause a fracture of the wheel.

Q That is done at Rogers?

A That is done at Rogers.

Q Then, where did you go?

A You went to Beavermouth.

BY MR. LEWIS:

Q You took the retainers off at Rogers?

A You took the retainers off at Rogers.

BY MR. SINCLAIR:

Q And you went to Beavermouth?

A A standing inspection of the train was made at Beavermouth and you proceeded east to Golden. At Golden you again took water and at this point an assisting engine was cut in.

Q That is another pusher?

A Yes.

Q To make it two engines from here on?

A That would be a pusher behind the van.

Q A pusher behind the van?

A Behind the van.

Q It would not be cut in ahead of the van?

A No, it would be behind.

Q On the tail end?

A Yes.

Q Yes?

A This pusher would assist you to Leancoil.

Q Yes?

A At this point the pusher was cut off by the train crew and you proceeded from Leancoil to Field with a single engine.

Q Now, Mr. Hooley, make the same move with diesel power starting out of Revelstoke.

THE CHAIRMAN: Make the same move where?

BY MR. SINCLAIR:

Q The same move with diesel power starting out of Revelstoke?

A With diesel power pulling east from Revelstoke there is no pusher and the first stop that is made is at Glacier. The train is inspected. Leaving Glacier you go east through the Connaught tunnel, Stoney Creek and down from Stoney Creek to Rogers or Beavermouth where a train inspection will be made.

Q Do you stop at Stoney Creek?

A You do not stop at Stoney, no.

Q Do you set up retainers?

A There is no retainers set up.

Q Why?

A If the train is not in excess of what the units, the locomotive consist, will pull up the hill --

Q Upgrade?

A Upgrade, these locomotives will take the same train down the same grade on the dynamic brake.

Q Right. Then you have got to Rogers or Beavermouth and you made what kind of test there, a standing inspection?

A You made an inspection of your train and you left Beavermouth and went to Golden and leaving Golden you would go to Field.

Q Would you have to take water en route?

A There is no --

Q Would you have to take water en route?

A No, there is no need to take water on the diesel locomotive.

Q Now, so that we may have the complete picture, Mr. Hooley, take a freight train in steam service westbound out of Field?

A Westbound out of Field you would have your regular road engine.

THE CHAIRMAN: What is the number of that exhibit, the map?

MR. SINCLAIR: The photograph of engine 5935 --

THE CHAIRMAN: No, the map of that territory, what is the exhibit number?

HON. MR. McLAURIN: It is Exhibit 8-A.

MR. SINCLAIR: Yes, Exhibit 8-A is right.

BY MR. SINCLAIR:

Q Mr. Hooley, we are moving westbound out of Field. You start off with one engine, a 5900, pulling the train, and just take us over the road, please, this being a freight train?

A Leaving Field with what we term a full tonnage train you would stop at Leancoil. At this point all your retainers would be set up by the train crew. At this point you would always make a thermal test.

Q You mean a brake test?

A A brake test. You leave Leancoil and proceed downgrade to Glenogle.

Q Yes?

A At this point a thermal inspection of your train would be made. Leaving Glenogle you proceed again downhill and en route between

Glenogle and Cloister your retainers would be put down by your trainmen while going at slow speed.

Q How would he put them down?

A They use their hands and they have brake clubs.

Q Did they walk over the top?

A They walked over the top of the train, yes.

Q As it was descending the grade?

F.V.Hooley

A As it was descending the grade, yes. The retainers were generally all finished being put down by the time you arrived at Cloister. The next stop would be made at Beavermouth. On your arrival at Beaver mouth the road engine would stop and take water. A cut would be made in your train at approximately the centre of your tonnage.

Q The centre of the tonnage, which might or might not be the centre of the number of cars?

A Yes, and you would then pull ahead from the watering facilities and two pushers would be cut in to the centre of your train.

Q Yes?

A They pulled up the rear portion of your train and left the van standing on the main line. Your third pusher would be then cut in next ahead of the van.

Q So now you have four engines on the train?

A Yes, you would have four engines.

Q And what type of ^{ENGINES}~~cars~~ would they be, R-3's and T-1's?

A The type generally used at Beavermouth just depended on the amount of tonnage that was being moved. Sometimes you would run into all T-1's or at times S-2's would be cut into the centre of your train. That is a 5800.

Q An oil burner?

A Yes, and a 5900 would be cut in next ahead of the caboose. After your brake test was made

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you would leave Beavermouth and proceed west up the hill to Stoney Creek.

Q What is an S-2?

A An S-2 is a 5800.

Q I thought a 5800 was an R-3?

A No, a 5700 is an R-3.

Q Well, Mr.Chairman, I have left out another one, I am sorry, on the exhibit I put in this morning, Exhibit 167. On page 2 just before the 5900 should come a designation to the effect that a 5800 is an S-2.

BY THE CHAIRMAN:

Q Is that an oil burner?

A Yes, that would be an oil burner.

BY MR. SINCLAIR:

Q Was it it built as an oil burner?

A There were a number built as oil burners and all we had in British Columbia were oil burners but there were some built with stokers and they worked on the Alberta district.

Q 5800 to 5811 -- apparently there were 12 of them.

THE CHAIRMAN: And the tractive effort?

MR. SINCLAIR: Sixty-six per cent.

THE CHAIRMAN: All right, you can go back over the trip you were describing.

BY MR. SINCLAIR:

Q Yes?

A On your arrival at Stoney Creek a stop was made

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where your two pushers from the centre of your train were cut out. Your train was again recoupled and you would proceed from Stoney Creek to Glacier with what we termed your Glacier pusher on the rear.

Q That is, with two engines?

A Yes, we had two engines. On your arrival at Glacier this pusher was cut from the train and the caboose or van would be dropped to the rear of the train. A terminal test of your brakes would be made. All your retainers would be set up at this time; that is, at Glacier.

You leave Glacier and proceed west down the grade to Flat Creek.

Q Flat Creek? .

A Yes, where a thermal inspection of your train was made. Leaving Flat Creek --

Q Were the retainers set off?

A The retainers were still applied.

Q Still applied?

A Yes. You left Flat Creek and proceeded to Albert Canyon. At Albert Canyon all your retainers were put down.

Q Were they put down when the train was stopped or did the men go over the top?

A They were put down when the train was stopped, and you made another thermal inspection of your train at this point. Leaving Albert Canyon you proceeded to Revelstoke.

Q Now, with diesels making the same move out of Field to Revelstoke, with the same type of train, where would your first stop be?

A Your first stop would be at Leancoil.

Q Are there any pushers used?

A There is no pushers used.

Q Throughout the entire movement?

A No.

Q With diesels?

A No.

Q What do you do at Leancoil?

A You make an inspection of your train.

Q Then where do you go?

A You go from Leancoil to Glen Ogle.

Q What do you do there?

A Make an inspection of your train.

Q Is that a standing inspection?

A Yes.

Q In both places?

A Yes.

Q Yes?

A And you leave Glen Ogle and proceed to Beavermouth where your train is again inspected.

Q You leave Beavermouth and proceed up the grade to Glacier?

A Yes. An inspection of your train is made at Glacier. You stop at Flat Creek and an inspection of your train is made at Flat Creek and again at Albert Canyon. From Albert Canyon you proceed to Revelstoke.

Q Are retainers used or are dynamics brakes used on the grade?

A Dynamics brakes are used to control the movement of the train down the grade.

BY THE CHAIRMAN:

Q So you would have one locomotive crew instead of four?

A Yes.

MR. LEWIS: Perhaps before my friend proceeds he might get the witness to explain the difference between a terminal inspection and a thermal inspection. I thought I heard the witness refer to a terminal inspection in some instances and a thermal inspection in other cases. I believe I have been told the difference but it might be worth while to put it on the record.

BY MR. SINCLAIR:

Q Would you please, Mr. Hooley?
First deal with a thermal inspection?

A A thermal inspection is made visually and by feel. When brakes are being used excessively it heats your wheels and when you come to Glen Ogle down the hill your trainman

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will walk along and visually inspect and if necessary will feel the temperature of the wheels. If the wheels get too hot at this time they might cause a fracture at some later date and a terminal test --

Q That is a terminal brake test and not a terminal inspection?

A No, a terminal brake test.

Q Mr.Hooley, if you have used the words "terminal inspection" as Mr. Lewis says you have -- although I cannot remember whether you did or not -- you meant a terminal brake test?

A It is called that and it is an application of your brake initiated from the engine by the engineer.

Q Yes?

A To make sure that all your brakes apply and release on your train.

Q I think earlier in your testimony, Mr.Hooley -- I do not know if I have this right or not -- I was asking about the various times over the subdivision and I think you said that the time on diesel and with a T-1 was about the same, is that right?

A Practically the same. I would say they are approximately the same.

Q Would it not take time to cut in the pushers?

A When making the move from Field to Revelstoke the time has not changed greatly for this reason that you have your positive inspection points and the track speed has not changed over the

years.

HON.MR.McLAURIN: Before you leave this distinction, Mr.Sinclair, Mr.Hooley has talked about terminal brake inspection and thermal inspection which he has related to the steam, is that right?

MR. SINCLAIR: Yes.

HON.MR.McLAURIN: And then he went on to speak about the diesel trip and at various points he referred to a standing inspection.

MR. SINCLAIR: Yes, sir.

BY HON. MR.McLAURIN:

Q Now, what does the standing inspection consist of?

A I used that term --

Q Does it involve a brake inspection and a thermal inspection?

A The trainman will go along the full length of your train to examine your brake rigging or maybe a cracked wheel or a cracked flange.

Q Let us put it this way. With the diesel on the standing inspections do you do the same things that you do with steam?

A There is no thermal inspectinn because you do not use your automatic brake to such an extent. The train is controlled down the grade by the use of the dynamics and it does not cause the excessive heat from the brake shoe to the wheel.

Q So there is no thermal inspection?

A No.

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BY THE CHAIRMAN:

Q Let us take this westward trip under steam.

How many men are in the train crew?

A You have your head end trainman, your rear trainman and your conductor.

Q And where does the head end trainman ride?

A The head end trainman rides in the cab of the locomotive, the leading locomotive.

Q The leading locomotive?

A Yes.

BY HON. MR.McLAURIN:

Q What is the crew in the pusher; two?

A The crew consists of an engineer and a fireman.

BY MR. SINCLAIR:

Q When you were running on the Mountain subdivision -- I am using this as an example of a mountain operation, Mr.Chairman and members of the Commission, as it is all mountain territory throughout the entire division as designated by the schedule with the employees --

THE CHAIRMAN: You are speaking of Field to Revelstoke?

MR. SINCLAIR: Yes.

BY MR. SINCLAIR:

Q You were working over the Mountain subdivision as a fireman and engineman in steam, Mr. Hooley. How would you describe the work of the fireman? What did he do?

A During the time that I worked on the east end

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as a fireman --

Q The east end means Revelstoke to Field?

A Yes.

Q On the Mountain subdivision?

A Yes, on the Mountain subdivision.

The grades were such that there was a considerable amount of steam used and the fireman maintained the steam.

Q Now, we realize of course there would be a difference whether it would be hand-fired engines you were using or oil burners but let us take oil burners. What was the fireman doing on oil burners in steam?

A Well, just what I said, Mr. Sinclair. He would keep his water and steam. He would have to take water at Twin Butte.

Q If he were going over the road with a coal burner he would have to shovel coal and if it were an oil burner the oil is automatically fed into the fire and the fireman has nothing to do with feeding it in other than to adjust his jets, I take it? Is that correct?

A Yes.

Q Does he have to look at the tender of an oil burner at any time?

A No.

Q How does he know what temperature the oil is?

A Well, my practice was to feel the temperature of the tank by hand.

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Q Are firemen not required by rule to do that?

A Well, I could not say they were required by rule to do that but I was brought up that way.

Q What were you feeling for?

A I was feeling for the oil temperature.

Q That oil is heated by steam?

A It is heated by steam controlled by the fireman, yes.

Q And if you do not watch it what happens?

A Your oil tank would boil over if you got it too hot.

Q So you would just step off your seat and feel the tank with ~~your~~ hand -- the back of the tank?

A Yes sir.

Q And other than that you would adjust your jets, would you?

A You had a firing valve to control the flow of oil to your firebox and you had an atomizer valve to control the spray of the oil. You had your oil heater valve to control the heat of the tank.

Q How would you find out how your fire was doing?

A You generally observe the colour of your stack.

Q To see whether it was foggy? You would observe it in what way, Mr. Hooley?

A You observe the colour. If you were giving it too much oil the flues would become sooted and you would glance out and change the position of your firing valve.

Q And they were right by your hand at the seat?

A Yes, right at hand.

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Q Did you ever have to put anything into the firebox?

A When the engine was working on the grade hard and fast it is the fireman's job to sand them out.

Q That is to say you put small amount of sand into the firebox?

A Yes.

Q You handled it like a sugar scoop, is that correct?

A Yes, I would say a five pound sugar scoop.

Q With regard to water the water readings would show that the boiler was properly maintained in regard to water?

A Yes.

Q And what did you do the balance of the time as a fireman?

A Well, you observed the country ahead, the track conditions and the position of the different switches.

THE CHAIRMAN: Mr. Sinclair, are you making any distinction in regard to this last subject between hand-fired and oil-fired engines?

MR. SINCLAIR: That was the oil-fired that he dealt with.

THE CHAIRMAN: I know, but you started with steam. I am asking you if the witness makes any distinction between hand-fired and oil-fired engines?

BY MR. SINCLAIR:

Q Mr. Hooley, in the days of hand-fired engines in

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regard to time that you as a fireman would maintain a lookout of the country ahead, as you put it, and the track, switches, et cetera, would there be any difference between hand-fired and oil-fired steam engines?

A The difference would be that in firing a hand-fired locomotive you were on the deck of the engine to put coal in the firebox. You also kept your deck clean and swept it up and washed it down. There would be quite a difference in the time spent on the deck of a hand-fired locomotive and an oil-fired locomotive.

D-1

Q With a hand-fired locomotive on an up grade, where would you be?

A I would be on the deck.

Q When you were drifting down grade where would you be?

A Drifting down grade I would be on the seat for three-quarters of the distance down the grade. You would coast to the bottom of the grade and would have your fire ready to go across on what we call the flats. On the Hill you would be on the deck approximately 30 to 35 per cent of the time.

Q For the running time of the division?

A For the running time of the division.

Q When you said "on the Hill" you mean on the Mountain Subdivision?

A No, I do not, the Farron and the Mountain subdivisions.

Q The one you are talking about is the Farron Hill?

A Farron Hill or Shuswap.

Q What are the grade conditions there as compared with the Mountain Subdivision?

A According to what I have been told, the grades on the Mountain are 2.2 per cent, whereas on the Shuswap they run around 1 per cent, and on Farron Hill, 2.2 per cent.

C In this territory of British Columbia,

the mountain territory, both on the main line, on the south main line; what are the winter conditions? Is there much snow?

A I did not hear the start of your question.

Q In the mountain subdivisions, that is the Mountain and the Kootenays and the Kettle Valley; what are the winter conditions on this territory?

A The winter conditions on the Mountain --

Q And on the other subdivisions?

A Well, do you want them --

Q All right, give us the Mountain Subdivision first?

A On the Mountain Subdivision you have severe snow conditions. You have a great amount of snow, but just as soon as the snow starts coming in the fall there is a snow service established to work between Revelstoke and Beavermouth.

Q What do you mean by a snow service, is that regularly assigned personnel?

A A regularly assigned snow service that works each day between Revelstoke and Beaver and Beaver and Revelstoke.

Q When you say "Beaver" do you mean Beavermouth?

A Yes.

Q Do they have special equipment?

A They are equipped with a nose plow and

a spreader. Between stations the nose plow is used with the side wings. When you come to a siding, in addition to using your plow, your spreader is used to pass over your siding track and push the snow clear.

Q Is there much difference between winter and summer operating conditions, Mr. Hooley, as far as you found it?

A There is a difference in this way, that during the snow period, especially during the night when there is no maintenance force on, the trainman will go out and clean switches.

Q Before you go into a siding?

A Before you go into a siding, yes.

Q That is the situation on the Mountain subdivision. Mr. Hooley, you said you wanted to deal with these division by division. What about Shuswap?

THE CHAIRMAN: Where is that?

MR. SINCLAIR: From Revelstoke to Kamloops, and then the next one is from Kamloops to North Bend, which would be the Thompson, and then from North Bend into Vancouver would be the Cascade. The Kettle Valley falls off at Ruby Creek down to a place called Midway.

THE CHAIRMAN: Let us deal with them one at a time.

BY MR. SINCLAIR:

Q Shuswap, Mr. Hooley, Revelstoke to Kamloops; what is the situation there as to weather?

A On the Shuswap subdivision you run into a different climate altogether as compared with the Mountain subdivision. Plows are used as far west as Sicamous, which is approximately 44 miles west of Revelstoke. At Sicamous you might get a snow condition from eighteen inches to two feet. The snow runs down to maybe one foot over the rest of the subdivision.

At Kamloops, this will be the Thompson subdivision, you will have **light** snow, six inches to twelve inches. You will have six inches to twelve inches from Kamloops to Spences Bridge. From Spences Bridge to North Bend you run into a snow condition where you might have an exceptionally heavy fall. When I say exceptionally heavy I mean it can come from one foot to thirty-six inches in a very short length of time. This will extend as far west to the Cascade subdivision to Yale.

From Yale west you run out of the snow, your heavy snow, and you will run onto a condition of from twelve inches to eighteen inches. Then you run out of

snow altogether around Mission City.

BY THE CHAIRMAN:

Q Excuse me, when you are speaking of these various falls of snow, six inches to twelve inches, twelve feet and so on, is that a single fall at a particular time?

A Yes.

BY MR. SINCLAIR:

Q Then on the south line from Ruby Creek down to Midway, which is the Kettle Valley, what is the snow condition there?

A Odlum and Brookmere, that is the Coquihalla subdivision, you will run from no snow at Odlum to a fall of eight to ten feet on the level. That is after the snowfall has come and it has settled.

Q Is that one snowfall of eight to ten feet?

A No, this is after it has settled. It will snow six inches to twelve inches at a time and stop, and maybe three or four hours it will start in again and you will have another fall, and generally by spring you have sometimes from eight to ten feet from Iago to Coquihalla. Leaving Coquihalla --

BY THE CHAIRMAN:

Q What are those places?

A Iago.

BY MR. SINCLAIR:

Q Is that east of Odlum?

A About 31 miles east of Odlum.

Q And then going over to Coquihalla, which is west, to Brodie, which is about 11 miles --

MR. LEWIS: Is that the red mark?

MR. SINCLAIR: I do not think you can fit them in just like that. It would extend a little beyond that on both sides.

BY MR. SINCLAIR:

Q Is Hope west of this point Iago?

A Yes, Hope will be approximately at mileage 53 and Iago is approximately at mileage 30 or 31.

Q About 20-odd miles?

A Yes.

MR. SINCLAIR: The red is from Hope, I think, Mr. Lewis; they do not coincide.

BY THE CHAIRMAN:

Q Mileage 53 would be 53 miles from where?

A 53 miles from Brookmere; the Coquihalla subdivision starts at Brookmere and ends at Odlum, where it has junction with the main line.

BY MR. SINCLAIR:

Q You have gone from Coquihalla, from that

area; what is the snow condition between there and say Princeton or Penticton?

A Between Brookmere and Penticton you will have light snowfalls and when it comes along to say early February you might have 24 to 30 inches on the ground. It runs out when you leave Kirton. At this point you drop down a 2.2 grade and you run out of snow conditions by the time you get to West Summerland.

Q Which is west of Penticton?

A Yes, 24 miles west of Penticton.

Q Then you come into Penticton?

A And you run out of snow.

Q No snow around Penticton?

A Generally if it snows an inch it will come and go.

Q Did you say that West Summerland was 24 miles west of Penticton; it is about 9 miles?

A No, Kirton. You tip the hill at Kirton and you go down to Summerland and from Summerland down to Penticton.

Q Have we covered the situation from Penticton to Midway?

A Leaving Penticton, Penticton is at lake level, that is the Okanagan Lake. You will run into a condition of no snow at Penticton to 36 to 40 to 48 inches at Chute Lake, which is a distance of around 28 miles. That is

for a distance of around 28 miles.

Q Do you mean that there is no snowfall throughout the winter?

A That is over the winter.

Q Then at Chute Lake over to Midway, what is the snow condition there?

A You will run into snow condition, it goes from four feet at Chute Lake down to approximately twelve inches around Midway.

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Q Then, taking it from Midway --

MR. LEWIS: That is not one fall either.

MR. SINCLAIR: That is over the winter.

MR. LEWIS: The accumulation.

BY MR. SINCLAIR:

Q From Midway right through to Crowsnest what is the general situation there?

A I am not too familiar. I have never worked there all one winter, but you are down at Midway and you climb out of Midway to Eholt. There is a snow condition at Eholt, and then you go down to around Grand Forks where you might have just a ground covering up to 4 or 5 feet of snow at the top of the hill, Farron, and you drop down again to the Arrow Lakes level and you will run right out of snow again.

Q This area you have just talked about is where Farron Hill is?

A Where Farron Hill is.

Q And where you were a fireman on the pusher?

A You climb right over the mountain.

Q This is the place where you were a fireman on a pusher?

A Yes.

Q Then the grade is quite a bit better from there right through?

A You do not run into anything heavier than a one per cent grade and you do not climb over any mountains. Therefore you do not run into an excessive snow condition.

MR. LEWIS: Excuse me, this Farron Hill, is it west of Castlegar?

THE WITNESS: West of Castlegar, between Cascade and Castlegar.

THE CHAIRMAN: How do you spell that?

MR. SINCLAIR: F-a-r-r-o-n.

MR. LEWIS: It is not shown.

MR. SINCLAIR: No.

BY MR. SINCLAIR:

Q It is the heavy grade in that south area?

A In the south area, yes.

Q Now, Mr. Hooley, based on your experience in running and in firing in these territories and working on them for many years, what particular problems does this snow bring, if any?

A It brings problems of cleaning switches. That is all that I could see. Of course, I was an engineman.

Q Does it bring problems to the crews in moving around, the train crews?

A Sometimes, yes. When there is excessive snow along the grade your trainmen will sometimes walk over the tops of the cars.

THE CHAIRMAN: I guess this would be a good place to break.

---Recess.

-- After recess.

BY MR. SINCLAIR:

Q All right, Mr. Hooley. These snow conditions that you have given in evidence are based on your observations over the years, are they?

A They are based on my observations over the years, yes.

Q And your impression as to these various conditions?

A Yes, my impression as to the actual snow fall.

Q As you saw and observed it?

A Yes.

Q As the result of these snow conditions are there any slides in the territory you have been speaking of?

A They have snow slides on the Mountain subdivision.

Q Yes?

A And small slides on the Cascade subdivision and slides on the Coquihalla subdivision.

THE CHAIRMAN: When the witness refers to the Mountain subdivision, that is from Lake Louise to Revelstoke?

MR. SINCLAIR: From Field to Revelstoke.

BY MR. SINCLAIR:

Q Now, Mr. Hooley, a part of the territory of British Columbia is known for schedule purposes or for labour agreement purposes as Mountain territory and part is known as valley territory which on Exhibit 8A are designated blue and red. You know those various territories, do you not?

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A Yes.

Q How would you compare the operating conditions of mountain territory versus valley territory?

A Now I do not see too much difference.

Q Now you say?

A Yes. With the operation of diesel locomotives over the mountain and valley territory that I cover there is not anywhere near the brake handling on a diesel locomotive compared with a steam locomotive. With a steam locomotive you used retainers on all the hills. With the diesel the train is generally controlled by use of the dynamic brake.

Q What about the situation with regard to slides, both snow and rock or mud, mountain versus valley territory. How would you compare them generally?

A In the mountain territory you have slides but from my experience the men that work on these territories are very good men and they know where the slides generally occur and on the valley -- this will include the Thompson and the Cascade subdivisions -- the men know pretty well where the rock area is and where the rocks will fall.

HON. MR. McLAURIN: That applies to either steam or diesel? I mean, diesel has not changed the climate.

MR. SINCLAIR: No sir, except in one place about which I will have the witness speak shortly.

It has certainly changed the climate in one place.

BY MR. SINCLAIR:

Q Yes?

A With regard to the slides and the rocks, as I say, the men are very familiar with the country and therefore they run at restricted speeds.

Q Is the mountain territory -- that is, the mountain territory designated on this exhibit -- more prone to slides than the valley territory, or just what is the situation?

A In the mountain territory in the last number of years there has not been the great amount of slides that there was 25 years ago. The vegetation seems to have controlled the holding of the snow on the hills and on the Cascade subdivision you would not actually call what they have snow slides. They are what we call slope slides. They do not come from a great height but they will cover the track very deep on the inside and down to practically nothing on the outside rail.

Q That is the Cascade subdivision from Northbend to --

A Vancouver.

Q Yes.

BY THE CHAIRMAN:

Q So, you get snow slides in mountain territory and in valley territory?

A You get snow slides in mountain territory, yes.

BY MR. SINCLAIR:

Q And in addition, in valley territory you also run into what you call mud slides?

A Yes.

Q But not in the mountain territory?

A You can run into the same condition and have mud slides in mountain territory, yes.

THE CHAIRMAN: I thought you were making a distinction.

MR. SINCLAIR: I did, too.

BY MR. SINCLAIR:

Q In the mountain ~~territory~~/do you have as much trouble with mud slides as you do in the valley territory?

A Approximately the same.

Q You do?

A Yes.

MR. LEWIS: Is a mud slide the same as a slope slide? The witness did not refer to a mud slide, my friend did.

THE CHAIRMAN: He says he gets snow slides in mountain territory and in valley territory and also slope slides in mountain and in valley territory.

MR. LEWIS: But he also used the term "slope slide". Would that be the same as a mud slide or is it a miniature snow slide?

THE WITNESS: A slope slide is a very

--

BY MR. LEWIS:

Q It does not start from as high up the mountain.

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It is a kind of snow slide only it starts lower down?

A Yes, and slopes generally over the inside rail to a fairly good depth, sometimes 12 to 15 feet, with practically nothing on the outside rail.

BY THE CHAIRMAN:

Q But a slope slide is a snow slide and not a mud slide?

A No.

BY MR. SINCLAIR:

Q What about rock slides? Is there any distinction in these territories -- as between mountain and valley territory -- with regard to rock slides or rocks coming down, if not termed "slides"?

A There are just as many rocks which come down in my territory in the valley as I ever saw in the mountain territory.

Q Now, you have also mentioned earlier in your evidence the Connaught tunnel. You operated through there in steam days?

A Yes sir.

Q What was the climate in the Connaught Tunnel in steam days?

A The condition of the Connaught Tunnel in steam days, was, I would say, very undesirable in this way, that your exhaust from the steam locomotive caused more or less an acid condition on the rail and everything seemed to be moist and although there are fans provided at the west portal to keep the tunnel clear you

would run into a weather condition from the east portal which would cause an up draught of air and it would cause a bank of gas or smoke approximately a mile and a half to two miles in from the west portal.

Q How long is this tunnel?

A The tunnel is five miles.

Q Five miles long?

A Yes.

Q And what action did you have to take?

Let us say you were on a freight train following another through the tunnel. As the engineman on an engine crew did you have to take any special action to go through this tunnel?

A Well, on the head end the engineer would be very alert to avoid a wheel slip. Your engine would be working along normally and you would run on to one of these wet spots and you would come into a very excessive wheel slip.

Q This is on a steam locomotive?

A Yes.

Q In going through the tunnel did you ever find yourself in a position where you had to put something over your head in order to carry through the tunnel?

A Yes, I have.

Q Was that an unusual situation?

A It would be a situation that would occur when you would come into the east portal of the tunnel closely behind another westbound

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train and the tunnel would be very smokey for a good three quarters of the distance through the tunnel.

MR. LEWIS: I am sorry to interrupt again but I just am having difficulty following this and it is probably due to my stupidity. I am puzzled as to how the witness' visibility would be improved by putting something over his head.

MR. SINCLAIR: If my friend would stop interrupting me perhaps he could cross-examine in due course.

MR. LEWIS: No, I was just trying to understand.

THE CHAIRMAN: I do not think that was the suggestion.

MR. SINCLAIR: No, I do not think it was either.

BY MR. SINCLAIR:

Q Why would you put something over your head, Mr. Hooley?

A Well, primarily it was very dirty and sometimes the heat from your exhaust would make your skin hot.

BY HON. MR. McLAURIN:

Q Would it make your eyes burn?

A Well, it did not seem to bother my eyes but you felt it more on your skin.

HON. MR. McLAURIN: Just like a Los Angeles smog only smaller?

MR. SINCLAIR: Have you ever been to Los Angeles, Mr. Hooley?

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THE WITNESS: No.

BY MR. SINCLAIR:

Q What is the situation with respect to diesels in the tunnel?

A The situation now as I have seen it is that you can enter the east portal and normally in daylight you can see the west portal and due to the difference in the exhaust of the steam and the diesel locomotives you do not run into the wet or acid condition on the rail.

BY THE CHAIRMAN:

Q Is this a straight tunnel?

A The tunnel is straight except, I would say, for 200 feet at the east end but you can see the east portal if you are standing at the west portal and the east portal instead of being like that -- (witness gestures with hands) -- it is more like a church window.

THE CHAIRMAN: Where is this tunnel?

MR. SINCLAIR: It is between Connaught and Glacier. It is between mileage 79 and 85.

THE CHAIRMAN: Is it west of Golden?

MR. SINCLAIR: Yes.

THE CHAIRMAN: Between there and Beavermouth?

MR. SINCLAIR: No, it is between Beavermouth and Glacier. It is 16 miles west of Beavermouth. On this map Exhibit 8-A it is shown as being between Beavermouth and Revelstoke, 16 miles west of Beavermouth.

THE CHAIRMAN: Thank you.

BY MR. SINCLAIR:

- Q Now, since you have been on the railway, Mr. Hooley, is there any special precaution taken in this territory in which you work, both Mountain and Valley, with regard to patrols by track forces or otherwise?
- A In this territory, in the difficult areas, they have track watchmen.
- Q Around the clock?
- A Around the clock, yes.
- Q Now, since you have been on the railway on the Mountain Subdivision, have there been any changes, major changes, to deal with and improve or change the operating conditions?
- A Since I started on the road they have installed block signals completely over the Mountain territory. We had a very bad area between Illecillewaet and Downie. To overcome these major slide hazards the railroad was rerouted for approximately three miles. Illecilliwaet and Downie are just east of Albert Canyon and is at Mileage 98 to 102 from Field.
- Q They diverted the track, you say?
- A There was a new railroad built on the south bank of the river instead of on the north bank. In the Mountain territory there are slide detector fences established at Mile 58.5.
- Q That is near Beavermouth?
- A Near Beavermouth, where there was a rock slide condition over the years. Then, when the

diesel engines came, that was another great improvement.

Q The slide detector fence, what does it do?

A Slide detector fences are fences that are put in this area and if a slide comes down and breaks one of the wires it automatically puts the block signal on to stop approaching trains.

Q Of all of these improvements, Mr. Hooley, which would you adjudge to be the most beneficial to engine crews working in Mountain and Valley territory?

A I would say the advent of the diesel engine, followed by block signals.

Q In recent weeks, at my request, you have made a number of trips over these divisions, these divisions both in Mountain and Valley territory, both on the main line and on the south main line, and as Exhibit 173 I should like to file Mr. Hooley's trip reports, being eleven trip reports on various segments of this B.C. district. I had marked on some of them the various types of units.

EXHIBIT No. 173 -- Eleven trip
reports by
Mr. Hooley.

BY MR. SINCLAIR:

Q On all of these observations, Mr. Hooley, where did you ride?

A I rode in the cab of the lead locomotive.

Q Over the entire trip?

A Over the entire trip, yes.

Q The first one concerns an extra, west, 2200 tons with three units. Would that be a good tonnage for that move from Field to Revelstoke?

A Yes.

Q That is the tonnage --

A That is the tonnage for the Beaver Hill.

Q Under the details of duties performed by the fireman it reads:

"Fireman out of cab four times during standing inspection made by train crew at Leancoil, Glenegle, Glacier, Albert Canyon, and drained reservoirs all units each time. No switching.

As train was pulling into yard fireman opened side door of each unit, opened air box drains; on arrival shop track advised engineer everything o.k. and proceeded to shop."

Under "additional comments" I read:

"Train parted between first and second car from engine at Mile 32.5 and Mile 99.5 account operating lever lifting at both points when making coupling at Mile 32.5 head trainman gave signals to fireman account lefthand curvature, but not necessary as conductor was approaching point of separation. Train controlled by use of dynamic brake. Fireman occupied left front seat and crossed over and picked up train orders at Leancoil,

"Beavermouth and Albert Canyon on engineer's side. All block signals and order boards called and acknowledged by engineer, trainman and fireman."

Would you explain to the Commission what you meant in your additional comments by the operating lever lifting?

A The operating lever is a device that is used to operate the coupler, that couples one car to the other, and this operating lever was bent a little and each time, that is maybe 40 or 50 miles, the coupler pin that keeps the knuckle coupler locked would rise and allow the coupler to come open and the train would part.

Q Was this a defect in the coupler?

A That was a defect in the operating lever to the coupler.

BY HON. MR. McLAURIN:

Q The operating lever is right at the end of the box car?

A Yes.

Q From my few trips I would say the operating pin -- that is the thing they play with?

MR. SINCLAIR: That is the lever that pulls open the coupler.

HON. MR. McLAURIN: There is no pin now. The boys used to have to go in with their fingers, and lose one once in a while -- that was 40 years ago.

MR. SINCLAIR: That is correct, sir. It is now called the locking block.

BY THE CHAIRMAN:

Q When this occurred, the train was in motion?

A Yes, the train was in motion.

Q What happened?

A The locomotive and the next car behind the engine parted from the rest of the train.

Q Went off by themselves?

A We ran approximately 150 feet between the head portion of the train and the rear portion of the train.

BY MR. SINCLAIR:

Q What happened to the brakes when you parted?

A The brakes applied in emergency.

Q Automatically?

A Automatically, yes.

Q Because the hose bags were separated?

A Just as soon as your coupler is severed, you will get an emergency application.

Q And you did on this occasion?

A We did, yes.

BY THE CHAIRMAN:

Q On both sections of the train?

A Yes.

Q Well now, under this outline of duties performed by the fireman, you say there was a standing inspection made at these four places and then a final inspection when the train was pulling into the yard. The fireman opened the side door of each unit and opened the air box drain. What is involved in that?

A The air box drains are drains or boxes on General Motors locomotives that are built to collect a certain portion of sludge, and during operation on the road these valves are closed and at terminals when the engine is idling on the shop track these valves are opened.

Q By whom?

A The fireman generally opens them up when he leaves the engine and closes them when he comes around, the fireman closes them when he comes around to go out.

BY HON. MR. McLAURIN:

Q Is this fuel?

A No, this is engine sludge deposits, I would call them.

BY THE CHAIRMAN:

Q From where?

A It is a kind of well that the sludge runs into.

BY HON. MR. McLAURIN:

Q Is this the same thing as blowing the reservoir?

A No, it is not. It is just a device built into the locomotive to catch engine sludge.

Q Where is it located?

A It is located approximately the middle of the diesel engine itself.

BY MR. SINCLAIR:

Q Is it impurities that may develop from the lubrication in the cylinders?

A Yes.

BY THE CHAIRMAN:

Q We have not heard about this before and I should

like to know why the fireman does it and why the shop staff do not do it?

A The firemen, as I see them, generally open these air box drains on this type of locomotive in their inspection of the units prior to going out. If they are closed, they glance at them, and if they are open, they close them.

Q You are the road foreman of engines?

A Yes.

Q What happens when they open the box?

A It does not blow, it is a drip -- the pipe is half-inch pipe and it just drains the sludge out on the ground. If the valves are opened during operation on the road all the dirt will fly back into and around your running gear, that is your wheels, brake gear and your traction motors.

Q This sludge is not something that occurs in the Mountain and Valley territories and nowhere else?

A No. This is on General Motors locomotives.

Q So that if the fireman does not do it on the Prairies or in Eastern Canada, how does it get done?

A Well, it all depends on the type of locomotive he is working on. On the Fairbanks locomotives there is a breather incorporated on those engines, and also on the Alcos. It is on the different types of locomotives.

Q You mean that this is found just on the General Motors?

A General Motors locomotives.

BY MR. SINCLAIR:

Q If the fireman did not do it, who could do it, Mr. Hooley?

A It is just a spring angle valve on there and the shop staff could operate it on the shop; close it when the engine is ordered and open it when it arrives at another shop track.

Q Could the engineman himself do it?

A Yes.

BY HON. MR. MARTINEAU:

Q How often should it be done?

A This air box train valve, I have seen them go from one subdivision to another.

Q Supposing it is not done, what would happen?

A Nothing that I know of. It is just a sludge deposit. You do not get any great amount of sludge draining out. It might drain out half a cupful when you open the valve. There is a valve located on either side of the locomotive.

BY MR. SINCLAIR:

Q Mr. Hooley, is there a by-pass around the well so that if the well gets full it comes out automatically, do you know?

A I don't know.

MR. SINCLAIR: I do not think there would be any dispute about that being the way it is constructed, that there is a by-pass valve. I am so instructed.

BY MR. SINCLAIR:

Q Then on page 2 of Exhibit 173. This refers to a road switcher in the lead with two B car body type units. Under "Preparatory duties performed by fireman" you say:

"Fireman walked through units and looked at gauges and returned to cab and opened supply locker and checked tools and flagging kit."

Where was the engineman at that time, Mr. Hooley?

A The engineman had not arrived on the

engine at this time. I walked out to the locomotive with the fireman.

Q The fireman was there early, was he?

A The fireman was there early.

Q Under "Details of duties performed by fireman en route" you say:

"Due to power decreasing at Mile 119.5 engineer instructed fireman to go back and examine filters. Fireman removed filter and power restored. Out of cab six minutes. Leading unit 8611. Fireman made inspection of units when running at Mile 103 and Mile 19. Out of cab four minutes each time. Account power decreasing en route to Golden fireman removed second filter from unit 8611."

This first trouble with the filter, where did that occur, Mr. Hooley?

A This occurred between Revelstoke and Greely.

Q How far is that out of Revelstoke?

A Greely is -- this mileage shown here is Greely.

Q How many miles from Revelstoke?

A Six miles.

Q When that occurred did you pass any comment?

A I passed the comment we were just

leaving Revelstoke and I thought the rear portion of our train might have been within the yard limits and I suggested to the engineer, "Might we back in?" But as the train was not too heavy for two units to handle we proceeded east.

Q You mean that even with the loss of power of one unit you could still maintain track speed?

A No, you do not make track -- you make the speed that you would generally make with a freight train.

Q All right, he said what?

A He thought that the two units could handle it up to what we called the thirteenth crossing bridge, that is the crossing where the track levels off and you go from -- that is about mileage 122, and you go to mileage 119 on a flat, and the engineer thought he could handle the train at a sufficient speed with two units and the fireman --

Q Did he do so?

A Yes.

Q The fireman what?

A And the fireman changed the filter and came back in the cab approaching the east switch at Greely.

Q When the fireman changed this filter how did he do it?

A He went around first and he stopped the engine.

Q You mean he isolated the engine?

A You isolate the engine.

Q How do you do that?

A On this type of locomotive there is an isolation switch?

Q Where?

A Located on the back wall of the cab.

Q Inside the cab?

A Inside the cab.

Q He went to that switch and turned it off?

A He turned that switch to the "Start" position.

BY THE CHAIRMAN:

Q Who did?

A The fireman.

BY MR. SINCLAIR:

Q Then what did he do to stop the engine?

A He pressed the stop button and it stopped that diesel locomotive. He then went out of the cab door located on the right side of the locomotive behind the engineer, around the rear of the engine and up the left side of the engine to the second door, he opened the door and inside this door by the diesel engine there is a filter arrangement with the fuel pump. You have a handle to open

up the top and remove the filter. This is a sock arrangement approximately that long by about three inches across.

Q "That long" being about a foot long?

A No, I would say nine inches; nine inches by two and a half to three inches.

Q He removed this?

A He removed this.

Q Then he came back into the cab?

A Came back into the cab and started the locomotive.

Q Started the unit, you mean?

A Started the unit, yes, and put the engine on the line and there was no more trouble experienced.

Q Just a minute before you go on. This was the leading switcher unit in which this occurred?

A This is the lead switcher unit, yes, 8611.

Q When the fireman went out to do this, to open the door and change this filter, at what speed was the train moving?

A When he first went out, around 22 miles an hour, and the maximum speed on the flat with our two units was about 27 miles.

Q Did you comment or say anything to him about this going out when you were moving?

A I told him he was crazy to go out.

BY THE CHAIRMAN:

Q Did the engineer send him out?

east of Beavermouth that night.

Q How long was that from the time the filter was changed?

A The filter was changed at Revelstoke; I would say approximately five hours before our departure time.

BY MR. SINCLAIR:

Q From the time the fireman took out the filter until you got to Beavermouth, where according to the report you had some more trouble, is that right?

A Leaving Beavermouth.

Q How far was that, from Greely to Beavermouth? How long did it take to go over that distance?

A Roughly three hours and forty-five minutes or four hours and fifteen minutes later.

Q Then when you were going out of Beavermouth what happened en route to Golden?

A Leaving Beavermouth the action of the engine was similar to that leaving Revelstoke. We were having a definite loss of power and the engineer spoke to the fireman. He said, "We will take it out at Golden."

Q We will take --

A We will take it out, take out the filter at Golden. The contour of the country there was such that you could handle the

A The engineer asked him to go out.

Q Just a minute, Mr. Hooley, we both cannot speak at the same time and have it taken down on the notes. The engineer asked him to go out?

A Yes.

Q This filter system, does it filter the fuel oil?

A It filters the fuel oil to the engine.

Q I suppose the reason the engine was having trouble was that there was some obstruction in the filter?

A There was some obstruction in the filter and the engine was losing power through lack of fuel.

Q Why would not that be caught in the shop?

A In this instance there were two brand new filters applied at the Revelstoke shop.

Q Before this trip?

A Before this trip.

Q Was the trouble in the filter or in the oil?

A I looked at the filter itself when the fireman brought it into the cab. It was a light shade of brown and it did not have any tarry substance on the side of the filter at all. It could actually have been caused by a leak in the suction line. But he removed this filter and there was no more trouble experienced until we got

train with two units. The leading unit was isolated and the filter removed at Golden.

Q That is the second time?

A That is the second filter. We proceeded on to Field without any filters in her at all.

BY THE CHAIRMAN:

Q Is there one filter or two filters?

A There is one suction filter and one pressure filter.

Q What was the first filter that was changed?

A The first one that was changed was the suction filter, on the suction side of the arrangement.

Q Was that particular filter changed the second time?

A They were removed. The one on the suction side was removed in the first instance and the one on the pressure side was removed in the second instance.

Q Was the train stopped when the second change was made?

A Stopped at Golden.

Q When you told the fireman on the first occasion that he was crazy to go out, what would have happened if he had not gone out?

A We would have gone on to Greely and

stopped and changed it there. The tonnage conditions of the train was such that we could have proceeded east with not too much difficulty. The engines would not have been overloaded or anything.

BY MR. SINCLAIR:

Q Page 3 of your trip report -- I think the balance of Page 2 of Exhibit 173 speaks for itself -- I notice under "Details of duties performed by fireman en route" -- on this train there was a four-unit consist made up of an A unit in the lead with three road switchers. You say:

"Fireman made running inspection at Mile 106. Time out of cab four minutes."

What do you mean by running inspection?

A These men are in the habit of going back and checking the readings of the gauges, and he is returning to the operating cab of the locomotive.

Q Did the engineer ask him to check anything?

A No, he did not.

Q To go from the A unit through these road switchers -- were they equipped with walkways over the couplers?

A Those engines have walkways, yes.

Q When he came back did he report anything to the engineman?

A No.

Q Did he open the side doors when he went back for the inspection?

A No.

Q If anything was wrong on these gauges such as low lubricating oil or anything of that kind, would the engineman be warned of it in the leading cab?

A If you have low lube oil on these units you have an alarm system that will give you an indication in the operating cab.

Q This is the same fireman you had spoken to in trip report 2, Mr. K. Cameron? Is that right?

A Yes.

Q Did you speak to him again?

A Yes.

Q What did you tell him?

A He said he wanted to go out --

Q What did you tell him?

A I told him that he was foolish to go out.

Q What did he say?

A He said he was -- as we came down the hill on dynamic brake he wanted to see if there was any smoke arising from the traction motors.

Q Was that necessary?

A Not necessary, no.

Q And he went out anyway?

A Yes.

BY THE CHAIRMAN:

Q I do not see any mention on this report of the fireman or the engineer opening the door and

draining the sludge?

A He didn't do it at all.

Q How often is it done? Is it a practice or not a practice?

A With some men they will do it all the time and with other men they do not even think of it.

Q Is it required?

A It is not required on the road. It is generally required on the shop track. It is just this trip method, as I see it --

Q When you say it is required on the shop track what do you mean -- by whom?

A These valves are generally left open --

Q You are talking about something that is required?

A Yes.

Q How is it required and of whom is it required?

A Well, as I see it, the firemen have generally taken it on themselves to open and close these valves.

Q Is it required or is it something they do on their own responsibility?

A The valves are there to be opened.

Q When you say it is required, is there any bulletin, any instruction or anything of that kind?

A No.

Q And you say it is something that is done by some firemen and not by others?

A Yes.

Q And if it were not done by the fireman would it go until somebody in the shop did it?

A Yes.

BY MR. SINCLAIR:

Q Trip report No. 4 of Exhibit 173, here is an "A" and a "B" unit on a freight train. Under "details of duties performed by fireman en route" you have:

"Went back to engineroom at mile 2
and again at mileage ^{71.4} 4, out of cab four minutes each time. When train stopped at Taft fireman got off engine along with head trainman, made visual inspection of units and also picked up train orders. When standing Taft, Annis and Chase fireman blew down reservoirs. No switching."

Under "final inspection duties" you have:

"Account run through engine and
outgoing engine crew had not arrived,
fireman and engineer waited five minutes
and when machinist appeared left engine."
What did they do when they were waiting there?

A They didn't do anything.

Q Under "additional comments" you have:

"Train controlled by use of dynamic
brake. Fireman made one running
inspection on right side and three on
left side. Engineer two on right side.
All block signals and order boards

called and acknowledged by engineer,
fireman, head trainman."

Trip report No. 5 is two road switchers and
I think the comment there speaks for itself.
Do you agree with that, Mr. Hooley?

A Yes.

Q No. 6, Exhibit 173, is an "A" unit and a road
switcher. Under "Preparatory duties per-
formed by fireman" you have:

"Not present when fireman came on duty
but observed fireman open fuse cabinet
and check main reservoir equalizing
lines just prior to departure."

Was this engine off the shop track at Kam-
loops?

A No, this was a run through engine.

Q What did the engineer do?

A When I got on the engine they were practically
ready to leave.

Q Under "Details of duties performed by fireman
en route" you have:

"Fireman made running inspection of
units mile 29, time out of cab three
minutes. Train crew picked up 19
cars at Keefers and relayed signals
through fireman. Not necessary if
train crew properly positioned."

You say he made a running inspection. You mean
he went back through the "A" unit and then out
on the road switcher?

A Yes.

Q Did he open the doors of the road switcher?

A He did not.

Q Where did he go, just up in the cab?

J2

A Went in the cab and checked the gauges.

Q Did the engineman ask him to do so?

A No.

Q Did he report to the engineman when he came back?

A No.

Q You say that on the pickup at Keefers the signals were relayed through the fireman on that occasion but that it was not necessary, according to your note, if the train crew had been properly positioned. Did the tail end crew come up?

A One man came up from the tail end.

Q Did he assist in the switching?

A Yes.

Q Why did they do it through the fireman?

A The curve was slightly to the left at the west end of Keefers.

Q And how would they position themselves to do it by giving signals direct to the engineman at this point?

A They could have -- one man could have rode up closer to the engine and the rear trainman stayed at the switch. Instead they were both back at the switch.

Q No. 7 of Exhibit 173, with respect to the details of duties performed by the fireman

en route and the number of times he was out of the cab and his duties during switching operations. You say:

"None when running. When standing at Ruby Creek checked units for lube oil, made visual inspection and drained reservoirs, also repeated this performance when stop made at switch Coquitlam yard. When switching at North Bend, Ruby Creek and Mission City all signals given direct to engineer. Fireman called position of switches to engineer but this not necessary account trainman in proper position."

BY THE CHAIRMAN:

Q I suppose this engine was taken from the shop track, was it?

A At North Bend they have what they call a run-around track that does not connect with the shop tracks and the incoming crew gets off at this point and the outgoing crew gets on.

Q This is what you call a run-through engine?

A It was a run-through engine, yes.

BY MR. SINCLAIR:

Q You say that when they were doing switching all signals were given direct to the engineer but the fireman called the position of the switches and you say this was not necessary because the trainman was in proper position?

A Yes, and the engineer was taking them.

Q The engineer was taking the signals directly?

A Yes.

Q I think No. 8 of Exhibit 173 speaks pretty much for itself. Am I correct, Mr. Hooley?

A Yes.

Q And the same applies to your trip report No. 9. It speaks for itself?

A Yes.

Q As to trip report No. 10 of Exhibit 173, under "Details of duties performed by fireman en route" you have:

"Account head trainman alone and in setting off seven cars to No. 1 track at Brookmere signals given to fireman. In taking siding at Princeton fireman cut highway crossing account head trainman going back for train orders. Fireman made inspection of units when running at mile 69."

Here again the fireman went back through the "A" unit to the two road switchers. Did he open any doors on the road switchers?

A No.

Q Where did he go?

A Just made a visual check of the gauges.

Q Did the engineer ask him to go back?

A No.

Q Did the fireman report to the engineman on his return to the cab.?

A No.

Q With regard to the setting off of seven cars at Brookmere, you say that the trainman was alone and the fireman was used. Was that necessary under those circumstances, Mr. Hooley?

A At Brookmere?

Q Yes?

A No.

Q How could it have been done?

A The rear trainman could have been there and the curve is not that severe that signals could not have been relayed easily with two men.

Q With two men, and you also say that the fireman cut the crossing?

A Yes.

Q You mean he went out and got the pin?

A He had to break the hose couplers and pull the pin and separate the train to allow the highway traffic to go through.

Q Did he give the engineman a proceed signal and the engineer pulled ahead?

A He pulled ahead and then the fireman coupled up again after the cars that were on the highway went over.

Q And he stayed on the ground during this move?

A At that period, yes.

Q And in the meantime the head trainman had gone for the train orders back to the station?

A The head trainman had gone back for the train

orders.

Q Did the conductor not bring the train orders up to the engine?

A No, the head trainman.

Q Why did he do that?

A We had had a meet at that point and generally the head trainman will get off right at the station order board but in this instance the westbound freight had the main line obstructed.

Q Could the conductor have brought the orders up to the engine?

A Yes, he could have, yes.

Q And this was to assist him?

A This was to assist in getting over the road, yes.

Q Under "Additional Comments" you say:

"Engineer made four running inspections on right side. Fireman made three running inspections on left side. Fireman rode left seat. Head trainman rode centre seat. Fireman's assistance at Princeton in cutting highway crossing not necessary as head trainman should have performed this work and waited for conductor to bring up train orders."

Then, in trip report No. 11 of Exhibit 173 we have an "A" unit and two road switchers.

With respect to duties performed by fireman

en route you say:

"Made inspection of units when running
at mile 124 and mile 109 and mile 14.

Out of cab four minutes in each case."

That is 14 miles before he came into the terminal?

A That would be 14 miles from Midway.

Q Just 14 miles before they came into the terminal?

A Yes.

Q You go on to say:

"Made standing inspection and drained
reservoirs at Chute Lake, McCulloch and
Beaverdell. No switching en route."

Did this fireman open the side doors when he made his inspections?

A He did not.

Q Did the engineer ask him to go back?

A No.

Q Did he make any report on his return?

A The only time he made a report was after we had made a stop at Midway, to the engineer.

Q And then what did he say?

A He said that the main reservoir pop valve was blowing on 8608, which was the trailing unit, and he made the comment that he would book it on the MP-74.

Q That is a pop valve on the reservoir?

A It is a safety valve to ensure safe working pressure on this reservoir.

Q Is there anything the crew can do about that?

A No.

Q Then you also say under "Additional Comments":

"Engineer changed off with fireman Chute Lake to Beaverdell and engineer made inspection of units when running at mile 57. Fireman made five running inspections from left side. Engineer made four running inspections from right side. Fireman commented on his return to cab after making inspection of units when running at mile 124 that there would have been a hot engine on unit 4088 if he had not flicked a switch while in the unit. On mention of this to me I questioned in my mind the manner in which such a condition could be avoided by the flicking of a switch. However, fireman returned to this unit approximately 20 minutes later and I followed him to make a personal observation and found that the temperature reading was 182 degrees which near normal."

When you say this took place at mileage 124, you would be just pulling out of Penticton, would you?

A We were roughly 12 miles up the hill.

Q Were you on the hill?

A Yes.

Q If the cooling mechanism on the unit had not been working properly, that is, the contacts were not in and the blowers working, Mr. Hooley, would you have got a hot engine climbing that hill with this train?

A Yes.

Q And is that why you say here you questioned in your mind this whole matter?

A This grade is a 2.2 hill and when your engines are working in No. 8 throttle and your fans and shutters are not working properly you would definitely get an overheated engine and you would get an alarm and on this type of locomotive it would also return your unit to idle, and in this instance I was standing against the back wall of the cab and I did not hear any alarm of any sort or description.

Q Well, the fireman does not suggest there was an alarm. He suggests that he prevented an alarm taking place?

A That is what he came back in the cab and told me.

F.V.Hooley

BY THE CHAIRMAN:

Q What have you to say about the switches that could be flicked when you have a hot engine?

A There is a switch located on a panel back in the engine room. It is a four-position switch and the four positions are "automatic", "off", "medium", and "full". If that switch had not been in the proper position leaving Penticton we would have had a hot engine before we got 12 miles up the hill.

Q From what a fireman said you gathered that it had **not** been in the proper position and he put it in the proper position?

A He implied that, yes. That is what I gathered when he told me about it.

Q That is what you understood?

A Yes.

Q That it had not been in the proper position when the crew came on, is that it?

A Yes.

Q And if the fireman had not discovered that, then what would have happened?

A We would have had a hot engine.

BY MR. SINCLAIR:

Q And I think what you are suggesting here, Mr. Hooley, is that you would have had a hot engine long before the fireman said he fixed it if that had been the fact?

A Yes, that is what entered my mind.

F.V.Hooley

Q Because you had been in the eighth throttle position for some 12 miles on this grade?

A From mileage 133.5 to 124. When you are 12 miles up the hill if your engine is going to run hot it is going to do it before that time.

Q So whatever the fireman did to the switch, you think that what he did didn't affect the operation one way or the other?

A No, I do not think he materially affected it, no.

BY THE CHAIRMAN:

Q But assuming that what he said could be taken at its face value and he did prevent this hot engine -- supposing he had not been there at all and the switch was in the wrong position, and then you developed a hot engine, then what?

A You would have to stop and cool down the engine.

Q You could not proceed with the remaining unit or units?

A No. This is very heavy grade territory -- 2.2 per cent.

Q And what kind of delay does that mean?

A It involves a delay of roughly 30 minutes.

THE CHAIRMAN: I think we will adjourn here, gentlemen.

--- The Commission adjourned at 12.35 p.m. until 2.00 p.m.

Monday,

May 6, 1957

AFTERNOON SESSION

--- The Commission resumed at 2.00 P.M.

F.V.HOOLEY, Recalled

BY MR. SINCLAIR:

Q Mr. Hooley, since you started with the railway in 1920, while running in engine service all the time your supervision has always been in respect to enginemen?

A Yes.

Q By the way, do you come from a railroad family?

A Yes, I do.

Q Your father was with the railroad?

A Yes, and my grandfather.

Q Your grandfather, too?

A Yes, my grandfather, my father and myself.

Q This life you have led in the railway industry, has it all been in British Columbia in the mountain territory?

A Yes.

Q I want you to give the Commission your opinion based on your experience of training enginemen. You have trained enginemen, have you?

A Yes.

Q On both steam and diesel or just on diesels?

A Not so much steam; more diesel.

Q Can you give the Commission your opinion as

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to how long it would take to qualify as an engineman a man who had acted as a fireman in passenger service on diesels in the British Columbia territory for three years, say, and passed his A book and qualified by passing his mechanical examinations. Let us assume he is now going to be turned over to you to okay him to handle freight trains, diesels, as an engineman in either mountain or valley territory in British Columbia. How long would it take to train him?

A I myself would take ten round trips or roughly 2500 miles.

Q And after that would you be prepared to okay him to handle freight trains?

A Providing he was an average man, yes.

BY THE CHAIRMAN:

Q What do you mean by taking ten round trips?

A Well, each round trip -- well, one division would be 125 miles and a round trip would be 250 miles --

Q Yes, I know, but you would go on the engine with this prospective engineer?

A I would accompany him for that number of trips, yes.

Q And what would he do and what would you do?

A He would run the engine and I would instruct him on the proper operation.

BY MR. SINCLAIR:

Q Mr. Hooley, the British Columbia district has been

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dieselized completely for some time, has it not? Since when?

A It is not quite completely dieselized yet. We still have a few steam engines on the Cascade ^{Subdivision} ~~supervision~~ in transfer service.

Q But on the mainline it is all diesel?

A Yes, on the mainline it is practically all diesel operation.

Q You have ridden a great many miles in diesels?

A Roughly between 160 and 165,000 miles.

Q As road foreman or both running and as road foreman?

A As road foreman.

Q About how many miles would you have run diesels yourself, very many?

A I was on passenger and freight for a period in 1952 that I worked on the mountain subdivision as an engineer.

Q When you are running as road foreman on engines do you actually get into the engineman's seat from time to time and take the train?

A Yes, I do.

Q Each trip?

A No, not each trip.

Q Not each trip?

A No.

Q When did you last run an engine with a train on one of these divisions?

A I ran ^{train} No.7 just before the end of 1955.

Q That is a regular assignment?

A I beg your pardon, I should have said 1956.

Q 1956?

A Yes.

Q That is the last one you ran?

A Yes. I have been filling in at Vancouver for the Master Mechanic and since that time I have not been out on the road too much.

Q But up until then you were out regularly, is that correct?

A Yes.

Q What generally has been your experience with the diesels that you have been on in regard to the application of protective devices like low lube, and hot engine, and ground relay and engine overspeed?

A In the engines I have been on there has been very little trouble of any kind.

Q But when such things do occur what is the usual practice as to the recovery of these devices on the engines you have been on?

A The recovery is generally made by the fireman. He will go back and reset a ground relay or, if it is a hot engine, he might check the position of the shutters. Of course, on passenger, we have the steam generators and they will go back and take care of that.

Q If you are on the controlling grade with tonnage, Mr. Hooley, have you ever had a protective device apply when your freight

F.V.Hooley

train was on a controlling grade with tonnage?

A No, I have not.

Q You have not had that experience?

A No.

Q Now, Mr. Hooley, in your opinion as an engineman and as a road foreman on engines are firemen required on road freight diesels in the British Columbia district?

A For efficiency and safety, I would say no.

Q Are they required for any other reason?

A Mechanically, no.

Q Well, why? Why are you of that view, Mr. Hooley?

A Well, from my observations over a period of six years as a road foreman, the work that these men are called on to do is may be one time in one thousand.

Q Now, what about lookout? Is lookout important in the mountains on the head end of a freight train, for instance?

A Yes.

Q Well, what is your position as to firemen being required for lookout on freight diesels?

A On the head end of the freight train you have at present a fireman and a trainman and an engineman on the right side and I do not see any necessity for another man to be located on the left side of the engine.

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Q Well, what about making running inspections enroute by looking back on your train?

A These inspections do not take any great amount of time. You can look back and make a running inspection on your train at certain spots and if the curvature is such you can look around when the curve is on the engineer's side.

Q Does the engineer make running inspections from his side in the mountains?

A Yes.

Q And what is the practice at this time? Does one of the men who is on the left side go over to keep a forward lookout on the right side when the engineer is making a running inspection back?

A No.

Q In British Columbia and these territories which you know and concerning which you have given evidence do they do switching en route on freight trains?

A Yes.

Q What about the need for a fireman to perform switching en route as a signal passer?

A I have found that if the train crew all work you can effectively pass signals to the engineer.

Q What about when your train parts, for instance. Do you ever have draw bars in the mountains on heavy pulls?

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A I have never had that occasion.

Q Never when you were running?

A I had one occasion on a steam engine at Illecillewaet.

Q When you said you never had that occasion, you meant on diesels?

A No, not on diesels.

Q But you had one at Illecillewaet when you were running on steam?

A Yes.

Q Is there any different action when that happens than the action you explained to the Commission concerning the parting of the train when you had a defective operating lever referred to in Exhibit 173, your first report. Is that action the same or is it different?

A The action is the same when your train parts. You get an emergency application on both portions.

Q Can the fireman be of assistance on these occasions, Mr. Hooley?

A The train crew including the conductor generally take over everything.

Q What about rocks on the track or slope slides or mud slides or snow slides? Those are the types of slides you mentioned earlier. Can the fireman be of assistance in observing these or assisting you as an engineman or in assisting the engineman in dealing with these conditions in your opinion?

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A In the position now, as I said, the engineer has only himself over there to observe them and the fireman is generally a younger man than an engineer and his eyes are just as effective as the engineer's.

Q Is the practice in the mountain territory in passenger service different from that followed anywhere else with respect to the number of men on the head end of a train?

A No, there is an engineer and a fireman.

Q Do you or do you not use road switchers in passenger service in the mountains, or do you use all A units?

A The general run of the regular passenger trains are all A and car body types.

Q What about Nos. 5 and 6?

A Nos. 5 and 6 are the road switcher type.

BY THE CHAIRMAN:

Q Nos. 5 and 6 are train numbers?

MR. SINCLAIR: That is right, passenger train numbers.

BY MR. SINCLAIR:

Q And Nos. 13 and 14?

A Nos. 13 and 14 in my territory have been steam in past years.

Q What about the Kettle Valley?

A The Kettle Valley, they are Fairbanks-Morse engines, car body type.

Q Have you ever seen passenger extras in the mountains, Mr. Hooley?

A Not passenger extras, I have seen sections of passenger trains.

Q And what kind of crews would go on those? Would the engineman be on those crews, perhaps on freight one day and passenger the next?

A Sections are generally called out of the freight pool.

Q And the fireman would be a fireman on freight one day and a fireman on passenger

diesels the next, could that happen?

A He could be, yes.

MR. SINCLAIR: That is all I have for Mr. Hooley, and my friend spoke to me and asked, with your permission, sir, that we would stand Mr. Hooley down. I would go on with my next witness and that would give my friend an opportunity to organize his notes. Would you please stand down, and we will recall you tomorrow, I hope.

ROBERT ALTON EMERSON, Sworn, Examined

BY MR. SINCLAIR:

- Q Mr. Emerson, you worked for the Canadian Pacific in summer employment when you were attending the University of Manitoba?
- A Yes, sir.
- Q You worked as an inspector in rock ballasting on the Kenora Division when you were at the university in the years 1928, 1929 and 1930?
- A That is right.
- Q After your graduation from the University of Manitoba in 1930 with a degree of Bachelor of Science and Civil Engineering, you entered the employ of the company on a full-time basis, did you?
- A I worked the summer of 1930 and then was laid off that fall and did not return to the company on a full-time basis until 1935.
- Q In that interim you went to Yale University, did you not?
- A Yes, I did, for one year.
- Q Where you were: a Strat^hcona Memorial Fellow in Railway Transportation and studying railway operations and economics?
- A That is right.
- Q You returned then, after having been laid off, and continued your schooling, you came back to the company in April, 1935, as a transit man?
- A Yes.

Q Between 1935 and 1939, you worked as a transit man at Vancouver, Revelstoke and Regina?

A Yes.

Q Now, a transit man's work entails riding engines occasionally, particularly in road service, to check on views afforded by fixed signals and matters of that kind?

A Yes, occasionally.

Q And you did that work?

A I did.

Q In 1939 you were promoted to roadmaster on the Manitoba District?

A Yes.

Q Having jurisdiction over the track?

A Over a portion of the track in the Manitoba District, yes.

Q Including buildings and signals and ^{facilities} ~~perquisites~~ of that kind?

A Not over buildings, generally speaking, no, and there are no signals in that section of track.

Q Where was that?

A That was in Deloraine, in southwestern Manitoba first and later at Virden, on the Neudorf and McAuley Subdivisions, running north and west of Virden.

Q Those are branch lines in southern Manitoba, is that right?

A Yes.

Q Generally speaking?

A Virden is more in western Manitoba.

Q When you were roadmaster and were conducting your duties, were you ever on trains and engines?

A Yes, quite regularly.

Q For the purpose of doing what?

A The purpose primarily was seeing what track conditions were from the engine.

Q Then, your next promotion was in October, 1941, when you were made division engineer, I think first of all at Brandon, Manitoba?

A Yes, I had served in the same capacity on a relief basis in Fort William earlier that year, but that was only a short time.

Q Between 1941 and 1944 you held the office of division engineer at Brandon and Moose Jaw, Saskatchewan?

A That is right, on those two divisions.

Q In that period, would you ride engines at all in that period?

A Yes, I was occasionally on engines.

Q Would you ride trains?

A Oh, yes, quite frequently on the trains.

Q Observing what?

A The condition of the property, operation of the trains.

Q And track riding qualities?

A Well, I took that as part of the condition of the property, very much so.

Q Your next promotion was in July, 1944, when you were made assistant district engineer

and you were stationed then at Vancouver?

A At Vancouver; the territory was the British Columbia District.

Q The entire district?

A The entire district.

Q And you held that position for a short period and later, in 1946, you were promoted to district engineer?

A Of the British Columbia District.

Q You held that position until the fall of 1948?

A Yes.

Q When you were promoted to the position of engineer of track for the system, the Canadian Pacific system, at Montreal?

A Yes.

Q You were engineer of track for about two years and a half, approximately, two years and four months, were you, until the latter part of 1950?

A Yes, October, 1950 I believe it was.

Q You were then promoted to be assistant chief engineer of the Canadian Pacific at Montreal?

A Yes.

Q You held that position as assistant chief engineer until the fall of 1951 when you were promoted to the position of chief engineer of the Canadian Pacific?

A Yes.

Q Canadian Pacific system, headquarters at Montreal?

A Yes.

Q And you held that position until April, 1955, when you were appointed to your present position, which is Vice-President of Operations and Maintenance of the Canadian Pacific system?

A In May, 1955.

Q Now, your present responsibility is what?

A At present, I am responsible for the operation of the Canadian Pacific Railway system, rail operation, including the maintenance of the property, both fixed property, that is to say, track, buildings, bridges, signals, as well as the rolling stock, including locomotives and car equipment.

Q You entered railway service, Mr. Emerson, at quite an early age. Did you know anything about railways before that?

A Well, I suppose I did. I was born in a Canadian Pacific station.

Q You are from a railway family, too, then, are you? Your father was with the company, and are you like Mr. Hooley, too, your grandfather worked for the Canadian Pacific?

A Yes, he was an engineman.

Q He was an engineman?

A Yes.

Q According to my notes you are a member of the Engineering Institute of Canada?

A Yes.

Q A member of the American Railway Engineering Association?

A Yes.

Q And a member of the Corporation of Professional Engineers of the Province of Quebec?

A Yes.

Q Are you in good standing in the last category, Mr. Emerson?

A In all of them, I think.

Q You could practise your profession if things go too badly?

A I could.

Q Earlier in this year, Mr. Emerson, did you make a special trip to Europe?

A I did.

Q For what purpose, and at whose request?

A For the purpose of observing the operations of certain European railways, particularly in respect of the manning of motive power, at your request, in order to secure evidence to present to this Commission.

Q How long were you in Europe, Mr. Emerson?

A Three weeks.

Q And during that period in Europe, who did you see; did you see railway people?

A Yes, I saw officers of five railways and spent time with them, talking with them, to secure information and travelling on their trains in company with delegated persons.

MR. SINCLAIR: I should like to file as Exhibit 174 a table showing a comparison of Canadian Pacific and certain European railways for the year

1955. This is basic statistical material, Mr.

- . Chairman, for both the Canadian Pacific and each of the other railways in this exhibit as shown in the International Railway Statistics for that year, being Exhibit 45. This is the document Mr. Lewis filed.

THE CHAIRMAN: What did you say is the connection between Exhibit 174 and Exhibit 45?

MR. SINCLAIR: The source of the data for the figures in this exhibit is Exhibit 45. This is internationally known as railway statistics, year 1955, being Exhibit 45 filed by my friend Mr. Lewis.

EXHIBIT No. 174 -- Statistical material showing comparison of Canadian Pacific and certain European railways for year 1955.

BY MR. SINCLAIR:

Q You have this table before you?

A I have.

Q Will you please mark it as Exhibit 174 so we can so refer to it. What was the purpose of this table, Mr. Emerson?

A The purpose of this table, Exhibit 174, is to afford a comparison of certain salient features of Canadian Pacific as compared with European railways which I visited.

Q The road miles, does that show the extent of the system?

A Yes. That is the measure of the physical extent of the railway property.

MR. LEWIS: Is it main line in each case?

BY MR. SINCLAIR:

Q The miles of road would be the miles of *first main* track and would not indicate the miles of multiple track?

A Yes, that is the comparable miles of *first main* track.

Q I notice here that you have train miles divided as between passenger, freight and other, and then you show the total train miles and then the percentage of train miles that are passenger as compared to all other?

A Compared to the total.

Q What is the significance of that, Mr. Emerson?

A Well, the total train miles is an indication of the extent of the operations. In other words, the number of trains that run one mile in the course of the year 1955. The percentage passenger is a straightforward figure which points out the inherent difference between the Canadian Pacific and the European railways, as will be

noticed from the fact that in the case of the Canadian Pacific the percentage of passenger train miles to the total is 37.6, and in the case of the European railways it ranges up to 75.5 for the Netherlands Railway.

BY THE CHAIRMAN:

Q I suppose that would be explained by the difference in the density of population?

A I would think that would be one very important feature, together with probably less competition from motor cars and that type of thing.

BY MR. SINCLAIR:

Q Then you have a heading "Density" and you have "Total train miles per mile of road." What is the significance of that figure, Mr. Emerson?

A Well, the measure of density is the train miles per mile of road, which is simply arrived at by dividing the total train miles in the preceding heading by the miles of road to produce the figure shown which represents the train miles per mile of road for each of the railways in the year 1955.

To break that down to a rather simpler figure, which is just for the purposes of illustration, the next line shows the average number of trains per

mile of road per day which is obtained by dividing the total train miles per mile of road by 365, the number of days in the year.

I am representing this by saying that if in the year 1955 you had stood beside an average mile of Canadian Pacific on an average day, 8.5 trains would have passed.

Q If you did the same thing in the case of the Swiss Federal Railway, which is the one at the extreme right, it would be 67.3 trains?

A Yes, that is a comparable figure.

Q Those are the extremes of those six roads shown on Exhibit 174, 8.5 in the case of the Canadian Pacific up to 67.³/₄ for the Swiss Federal Railway?

A That points out one other feature, which is the fact that they have more multiple track in their operations, a higher trackage of multiple track.

Q That is necessary to carry their density of traffic?

A Yes.

Q Then under "Locomotives" I understand that you have that broken down into steam, electric and diesels, and then diesels subdivided to indicate those of different types and then the total for all types. What general statement on that do you wish to make to the Commission, Mr. Emerson?

A This is information which was reported for the year 1955. The picture is changing rapidly in certain respects. It is an indication, a very rough one, perhaps, of the relative use made of steam, electric and diesel traction on the different railways.

The reason for the division of the diesel category into those below 350 horsepower and those above 350 horsepower is the fact that a number of European railways make extensive use of very small diesel locomotives for switching around individual stations, spotting a car at a nearby plant, and that type of thing.

Q You say that is roughly an indication of the type of traction used in the operation of these various railways. For instance, I note that you say this is changing rapidly.

A Yes.

Q I notice in the case of the Netherlands railways we had some evidence through Mr. Koster that in 1955 they had 256 locomotives, and as I recall his testimony there was hardly any left in active operation at the time he was giving evidence a little while ago.

A In the case of steam locomotives there would be none by the end of this year,

that is what he said.

Q There have been similar changes of course, even in the case of the Swiss Federal Railway, and not so much in some of these others possibly, but there is a marked change in them all; is that your evidence?

A There is some change in them and the Netherland Railway would be the most marked. Of course we are changing quite rapidly ourselves on the Canadian Pacific.

Q I notice that you show steam, electric and diesel locomotives. Is there any comparability in the matter of electric and diesel traction?

A Yes. The basic difference is that the electric locomotive takes its power from an overhead wire or a third rail while the diesel carries its own power plant with it, but the operation and manning of these locomotives in European practice is quite similar and they are quite comparable.

Q Now I would like to deal with these different railways separately, starting with the British railways.

BY THE CHAIRMAN:

Q Would the electric locomotives be as powerful as the diesels?

A Yes, sir. We will come to one electric locomotive described in this of 6,000 horse-power, and the Swiss Federal Railway

have another locomotive that is 11,500 horse-power, I believe.

MR. SINCLAIR: I will be introducing some photographs, Mr. Chairman.

BY MR. SINCLAIR:

Q Taking the British railways, Mr. Emerson, and just trying to bring it into focus here, what would you say about these comparative figures as shown on Exhibit 174, that is compared with the Canadian Pacific?

A Well, as the miles of road indicate, the British railways are slightly higher than the Canadian Pacific Railway, roughly one-eighth. The total train miles is roughly seven times as great.

Q One-eighth larger in miles of road and seven times as great in regard to the traffic handled?

A That is right. In passing, the percentage of passengers ^{train miles} shown is 63.6 per cent for the British railways as compared with 37.6 per cent for the Canadian Pacific. Then breaking down these two questions of density, the average number of trains per mile of road per day is 52.2 for the British railways as compared to 8.5 for Canadian Pacific Railway.

Q What is the predominant type of operation in the way of motive power, Mr. Emerson?

A The British railways is predominantly a

steam operation. They have some electrification planned and I think under way. They make some fair use of diesels in yard service. There are very few road units which have been used primarily up to the present time at least in passenger service. In the southern part of England they have extensive multiple unit electric operations. That is indicated by the last item on the sheet, which gives the railcar units as 4,685, that is electric.

Q In road service in diesels, Mr. Emerson, in Great Britain, I understand they make relatively small use of them and, as you say, it is mostly in passenger service, but they do have some in freight service that you know of, do they?

A Not that I know of, in freight service.

Q On diesels is there a fireman used?

A On the British railways?

Q Yes.

A Yes, up to the present time at least.

That is a matter which is currently under negotiation between the British Transport Commission and the unions they deal with. The railways are endeavouring to obtain an agreement with the unions to dispense with the use of firemen on diesels.

Q Both passenger and freight?

A So I understand. That may be limited to

certain conditions, but that is the point at issue.

Q That matter is under negotiation at the present time?

A Yes.

Q You have said that they operate a fair number of diesels in yard service?

A Yes.

MR. SINCLAIR: Before I go on to that, with your permission I should like to file as Exhibit 175 two photographs which are mounted on the one sheet and which is entitled "British Railways."

EXHIBIT No. 175 -- Photograph,
locomotive,
British railways.

BY THE CHAIRMAN:

Q Are the gauges of the railways referred to on Exhibit 174 all the same?

A All standard gauge. The narrow gauge operations were eliminated in this compilation.

BY MR. SINCLAIR:

Q In steam operations in Great Britain, in freight service, how many men are there in the cab?

A Two men.

Q Just two men?

A Yes.

Q Is there any operation in Great Britain, steam or any other type of traction,

where there are more than two men in the cab?

A No.

BY THE CHAIRMAN:

Q What about diesels, in so far as they have diesels?

A In the diesels, yes; in passenger service, up to the present time I understand they have been carrying a fireman. That is the point at issue currently.

Q How many men in the cab?

A Just two men, sir.

BY MR. SINCLAIR:

Q Looking at Exhibit 175, the first photograph, what is your comment on that?

A That photograph shows a diesel-electric yard switching locomotive which is actually very similar to and was built by the same manufacturer as the locomotive shown in one of the exhibits which Mr. Koster presented, Exhibit 44.

Q Looking at the locomotive, as far as I can see it is identical?

A Yes.

Q With that shown on Exhibit 44 used on the Netherlands Railway?

A Yes.

Q You say that they were made by the same company?

A By the English Electric Company.

Q They made the locomotives for the Netherlands Railways and those used by the British Railways, the photograph of which is here?

A Yes.

Q Mr. Emerson, who took these photographs?

A I did.

Q I will be presenting a number of photographs to the Commission. Those photographs that I will present, did you in every case take them yourself?

A I think in every case with reference to the European railways.

Q Looking at Exhibit 175, the top of the page, you say that that is similar to the photograph of the diesel locomotive in Exhibit 44, filed by Mr. Koster?

A Yes.

Q This shows a diesel electric yard switching locomotive. What is your comment in regard to that? I see there are a number of men around there. Has that any significance?

A Well, in the first place, with his head out of the window you will see the engineman. This unit is operated by an engineman alone.

Q In the cab?

A In the cab.

Q At all times?

A Yes. It is equipped with dual controls and has a dead-man control and the yard crew in addition -- the yard crew that works that engine in Britain consists of a shunter, an under-shunter, with one or two additional under-shunters if circumstances require.

BY THE CHAIRMAN:

Q If I understood you, I think you said that there were two men in the cab of diesels in Great Britain?

A In road service, sir.

Q But not in yard service?

A Not in yard service, no, sir.

BY MR. SINCLAIR:

Q On the British railways are the ground crews in yard operations assigned to any particular engine?

A No, they are not married to the locomotive the same way as is followed in our practice in this country. There is a certain flexibility in the case of the ground crew who do not always accompany the engine and may work with another engine.

Q Is that general in all the railways that are referred to in Exhibit 174?

A That is the general pattern.

Q Mr. Koster has talked about these shunters using skates. Is that the usual practice too?



A Yes, that is quite common, I believe, on all of these railways.

Q Now, you spoke of the electric train operations of the British railways. In what part of England do they operate, Mr. Emerson?

A Generally the southern part of England, London south.

Q Are they third rail operations?

A Yes.

Q Can you see that from this photograph?

A Yes, you can, as a matter of fact. From the end of the platform the first rail you cannot see and the shiny rail is the running rail and then just beyond that is the third rail.

Q Are these what we have heard of here as the multiple unit cars?

A Yes.

Q Multiple units?

A Yes.

Q Now, is there any operation in this country that is similar to this type of operation, Mr. Emerson, that you know of?

A Yes, this is similar to the electric operation of the New York Central out of Grand Central Station in New York City. The New Haven also run out of Grand Central Station into Connecticut and also it is similar to the Canadian National operation out of Central Station in Montreal through Mount Royal tunnel to St. Eustache.

BY THE CHAIRMAN:

Q What is the similarity?

A That they are all electric multiple unit cars, sir.

BY MR. SINCLAIR:

Q The Grand Central operation is in part, I think, a third rail operation and in part catenaries?

A I think New York Central is all third rail.

Q All third rail?

A Yes.

Q And Canadian National?

A Canadian National is overhead.

Q That is these catenaries?

A Yes.

HON. MR. McLAURIN: What is that third one?

MR. SINCLAIR: Overhead or catenaries.

HON. MR. McLAURIN: That is the same thing.

THE WITNESS: Yes, sir.

BY THE CHAIRMAN:

Q Are these electric units revenue carrying units?

A Yes, these carry passengers, sir. These are in passenger service exclusively.

Q They are like the Budd cars?

A Very similar; the principal difference is the fact that they are electric propulsion instead of diesel. All of these operations that we have mentioned, including the British Railways, are manned by the engineman alone

in the cab.

BY MR. SINCLAIR:

Q Now, in England, in addition to the engineman, who is in the operating cab alone as you have stated, how many other employees would there be on the train?

A On these trains the only other train service employee is the guard who travels in the rear.

Q How many cars run in multiple in England in these multiple unit operations, Mr. Emerson?

A These multiple unit operations are in sets, six cars to a set, and sometimes they combine two sets together to make twelve cars.

BY THE CHAIRMAN:

Q Where do they operate?

A London south. I travelled on them from London to Brighton, a distance of 55 miles. I think the trip was one hour. It is a high speed operation. The maximum speed is 85 miles an hour, and of course in that dense, heavily populated area these trains must be certainly very well patronized.

BY MR. SINCLAIR:

Q How many people would a set of six cars carry, Mr. Emerson?

A Well, I suppose if it was a rush time of day in commuter service or something like that you could easily get 100 persons or maybe 150 in a car. I didn't count them, but they could easily run up to 900 people.

Q How many multiple unit trains do they run per day on the British railways in the southern part of the country?

A In the southern region they run 1,000 trains a day, more than 1,000 trains a day of this type.

Q And in every case the assignment is one man in the cab?

A The engineman alone.

Q Now, turning to the next group, the French National Railway Company -- by the way, Mr. Emerson, so that I will not have to ask this each time, are all of these European railways that you visited state-controlled?

A Yes, they are either completely state-owned or state-controlled in every instance.

BY THE CHAIRMAN:

Q Before you leave England, do you know anything about the operation between Edinburgh and Glasgow?

A I have travelled between Edinburgh and Glasgow, yes sir, on steam, sir.

Q Anything else?

A No, I have not travelled on anything else. I read something the other day about them having used diesel in passenger train operation up there.

Q You do not know anything about it?

A No. It has just been introduced.

BY MR. SINCLAIR:

Q Taking the French National Railway Company and looking at Exhibit 174, Mr. Emerson, would you make a comparison and run-down of that as compared with the Canadian Pacific, please?

A To run it down quickly, the French National Railway Company is very roughly 50 per cent larger than the Canadian Pacific in terms of miles of road. Train miles are about five times larger. The percentage of passenger is 52.0 as compared with 37.6 for the Canadian Pacific, and the density is 26.1 trains per day per mile of road compared to 8.5.

Q And the predominant type of operation so far as motive power or traction is concerned is what?

A In the French railways predominantly steam although they are moving towards electrification of heavy traffic lines quite rapidly. They have carried out and are carrying out an extensive program of electrification, an overhead system.

Q Diesels?

A In diesels they use diesels in yard service and in freight service but only to a limited extent up to the present time. They have not got the complement of locomotives to use them extensively.

Q You have taken certain photographs of French locomotives. I should like to file as Exhibit 176 two photographs mounted on one

sheet headed "French National Railway Company."

EXHIBIT NO. 176 -- Two photographs of
locomotives of
French National Rail-
way Company.

BY MR. SINCLAIR:

Q By the way, before we look at these, Mr. Emerson,
in France do they have any of these self-
propelled passenger cars or multiple unit cars?

A Oh yes.

Q They do?

A Yes, Exhibit 174 shows that. You see that they
have 534 rail cars electric and 1,027 diesel.

Q They have self-propelled diesel cars as well as
electric cars, do they not? What is the situ-
ation about that?

THE CHAIRMAN: That is shown on the state-
ment.

THE WITNESS: That is shown in the state-
ment.

BY MR. SINCLAIR:

Q I notice that they have very large numbers of
them, much more than the relationship in
England?

A Yes.

Q Now, looking at the first photograph on Exhibit
176, what is your comment on that?

A This is a diesel electric yard switching loco-
motive of the latest type on the French
railways, 600 horsepower. It is equipped with
dual controls. It is operated by the

engineman alone. You can see him also in this photograph with his head out the window.

Q Is he standing on this type of unit?

A Yes, they generally stand.

Q He generally stands on this type?

A Yes.

Q Has this unit got any other devices that are not on Canadian Pacific diesels?

A It has no dead-man control.

Q It has no dead-man control?

A No.

Q And in that respect it differs from the British in yard operation?

A Yes, British locomotives over 200 horsepower are equipped with dead-man control.

Q Diesels?

A Yes.

BY HON. MR. McLAURIN:

Q With only one man?

A Yes, with only one man.

BY THE CHAIRMAN:

Q Are the British dual control?

A Yes, the British are dual control.

BY HON. MR. McLAURIN:

Q What does he do with the dead-man control when he goes from one dual control to the other?

A That is dual too, sir. There are two dead-man controls.

Q Does he spreadeagle himself?

A No. Of course, he makes the transfer when he

stops and if he sets the brake valve the device does not apply anyway and alternatively these are generally constructed so there is a lapse of several seconds between the release of the dead-man control and the application of the brakes. There is an interesting example of that a little later on, but it is possible for him to leave one side and step across to the other and recover the dead-man control before the brakes apply.

BY THE CHAIRMAN:

Q On the French railways the yard switcher has no dead-man control?

A That is correct, sir.

BY MR. SINCLAIR:

Q Looking at the bottom photograph on Exhibit 176, Mr. Emerson, have you any comment on that?

A That is a Baldwin diesel actually built by the Baldwin Locomotive Company.

Q Built in the United States?

A Yes.

Q And imported?

A And shipped over to France following the liberation of France.

BY THE CHAIRMAN:

Q It is also a yard switcher?

A Well, it is rather like our type on Vancouver Island, like a road switcher. I don't know whether it shows up too well in that

photograph but you can see there is a little projection beyond the far end of the cab.

This picture was taken in the Gare du Nord in Paris where the engine was used in yard and transfer services taking drafts of passenger equipment in and out. It is operated by the engineman alone.

BY MR. SINCLAIR:

Q When it is working in yards, Mr. Emerson, at all times is the engineman alone in it?

A In yards, yes, in general. Of course, when they have occasion to make a move out onto the main line then there is some other person with the locomotive.

Q Would the ground crew accompany the locomotive into the main station in Paris?

A Yes, the ground crew was with this engine at the time I saw it.

BY THE CHAIRMAN:

Q What is the ground crew situation in France?

A The ground crew in France consists of a yard foreman and two yardmen. They call them a brigadier and two agents.

Q Are they attached to the locomotives?

A No, on none of these railways are they married to the locomotives just as badly as in this country but there are variations in the practice and by and large they are more flexible.

Q I understood you to say that in England wherever the ground crew was not married to the locomotives they might have more than three in certain situations?

A Yes sir.

Q What about France?

A In France, as it was explained to me, there is the brigadier and two agents.

Q What would you say from your observation of the respective sizes of the yards in England and in France as compared with the Canadian Pacific and the amount of movement that goes on?

A I would say -- I saw a yard in France which I have particularly in mind which is larger than anything we have in the Canadian Pacific. It had 70 odd tracks in it, as I recall. It was on the outskirts of Paris. I have not got the figures on car count but it would doubtless be very large. It is a large marshalling yard outside of Paris at Villeneuve. It is a hump yard operation.

Q Is that the only one that would compare in size with Canadian Pacific yards?

A No sir, I am sure it is not. I have also seen

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a yard outside of Dijon that is also a very large yard. They have quite a number of them. I did not attempt to apprise the total number of yards in relation to ours but I am satisfied from what I have seen that they have many more and quite large yards than we have. Obviously they must have, in a sense, when you look at the statistics on train miles. 107,000 compared to 32,000 train miles.

BY MR. SINCLAIR:

Q Would that apply to Britain, too, Mr.Emerson?

A Yes sir. Certainly the British yards are not as modern as the French yards I visited but again they must handle a tremendous amount of traffic.

BY THE CHAIRMAN:

Q We do not want you to speak of anything you do not know about, Mr.Emerson. I just thought if you knew we would like to have it.

A I will try and round out the picture for you as far as I can, sir, but there are obviously limits to the amount of information in my possession.

BY MR. SINCLAIR:

Q Were you in the yards in the Netherlands? . I realize that we had them explained to us by Mr. Koster but perhaps you could comment on them concerning how they compare to the Canadian Pacific yards as to size?

A Yes. I was in a yard in the outskirts of

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Amsterdam which was quite a large yard.

I did not get the statistics on it to find out how many miles of track it had and so forth nor could I tell you the exact size but I observed the operations for a short time.

It is a hump yard and it is obviously a very busy spot. The Netherlands freight operations are primarily night movements, as Mr. Koster explained, I think.

BY THE CHAIRMAN:

Q What about flat switching yards?

A The European railways generally do more hump switching than we do but they certainly do flat switching as well.

Q But you did not come here prepared to comment on your observations of that sort of thing so perhaps you cannot say very much about it.

A Well, to endeavour to apprise the relative amount of flat switching which they do in one country there and on the Canadian Pacific, that would be quite an undertaking in itself. To me it was not the size or the extent of it so much as the method or manner.

Q I will tell you what I have in mind, Mr.Emerson, and Mr. Sinclair. I was invited to go to the Lambton West Toronto yards.

THE WITNESS: Yes.

BY THE CHAIRMAN:

Q I was invited to observe what was there in the way of fixed trackage and the movement and so

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on and I would be interested -- and I think we all would be interested in knowing what the relationship is between what goes on in those yards and what goes on in the yards in England, France and all these other places, about which you have spoken, but if you are not prepared to state this at the moment we will pass along.

A { Well, certainly the European railways have yards that handle an equal amount or more traffic in terms of cars than the Lambton West Toronto yard.

Q { They may have more yards but they may be smaller?

A { Equally, sir, some railways at least have larger yards. The one I spoke of at Villeneuve is quite a large yard.

Q But it is a hump yard?

A Yes sir.

Q Lambton West Toronto is flat switching?

A Yes, Lambton West, Toronto, is flat switching, that is right.

Q Although, they have something there they call a hump?

A Yes, but it does not compare with the European railway hump yards, no. But even on the hump yards there is inevitably some movement which involves flat switching. It is the principle rather than the extent of it which concerned me.

BY MR. SINCLAIR:

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Q In France, in freight service, they have diesel locomotives, Mr.Emerson?

A Yes. Up to the present time they are used in transfer service around Paris primarily. That is to say, moving drafts of cars from one yard to another.

MR. SINCLAIR: As Exhibit No.177 I would like to file two more photographs which Mr.Emerson took in France, the top photograph being of a diesel electric and the bottom photograph having to do with a steam operation in suburban service.

EXHIBIT No.177: Photograph of diesel electric road freight locomotive. Weight on drivers, 267,000 pounds. Horsepower 2,000. Control cab at each end.

Photograph of rear end of a steam operated suburban train in Gare St.Lazare with window of reverse movement control cab visible to the right of the center door opening.

THE CHAIRMAN: Do you wish to take a break this afternoon, Mr.Sinclair?

MR. SINCLAIR: Well, sir, I am sure that Mr.Emerson would appreciate a small break and perhaps we could arrange one for his benefit.

THE CHAIRMAN: Then we could just break at this point for a few minutes.

--- The Commission took recess.

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--- After recess.

BY MR. SINCLAIR:

Q Exhibit 177, have you marked it, Mr. Emerson, the last one we put in?

A Yes.

Q It shows two other French types, one a diesel-electric freight locomotive, and what is your comment on that -- it is the top picture of Exhibit 177?

A The 2000 horsepower diesel-electric road freight locomotive is one of the most recently developed for this purpose on the French railways. They have some seventeen in service with eighteen on order. This unit has two cabs, one at either end, similar to the one appearing in the photograph. It is not equipped with deadman control and is operated in freight service by the driver, engineman, you might call him, and a helper. Now, the engineman and the helper, the two men, constitute the entire crew of the train.

Q There is no conductor?

A No conductor, no trainman, just the engineman and helper on the locomotive.

Q That is the whole train crew?

A That is the whole crew.

BY THE CHAIRMAN:

Q How do they do switching?

A This, at the present time, sir, is used, as I think I mentioned earlier, in the operations

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of the French railways, the diesel locomotive is confined to freight service in a limited way, just transfer between various yards around Paris, for example. If they have switching to do en route, in accordance with the system, they would carry a trainman to make couplings and uncouplings.

BY MR. SINCLAIR:

Q Where would he ride?

A He would ride back on the train, on one of the cars.

BY THE CHAIRMAN:

Q You mean outside?

A Yes, sir, it is quite a common practice in Europe, you see many of the freight cars have what we would call a sentry box on the end of the car and a trainman simply gets up and rides on one of these cars in this little box on the end of it or, if it is a fine day, he may ride outside.

BY MR. SINCLAIR:

Q Electric locomotives, are they used in freight service in France?

A Yes, they are also used. They are manned by an engineman alone, who is accompanied by a trainman who may ride anywhere on the train. He has no helper.

Q Would they be in regular freight service, between main terminals?

A Yes, on the main lines which are electrified, they would be in regular service.

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Q For instance, in way freight service on these lines or in pick-ups, set-offs, or whatever the comparable French terms are, in that type of operation, what would the crew consist of on an electric locomotive?

A In the case of way freights, what we call way freights doing switching en route, they carry a second trainman on the trains.

Q What about passenger service, are electrics used in passenger service in France?

A Yes, electric locomotives.

Q What is the crew on the electric locomotive in that case, on these passenger trains?

A The engineman alone on the locomotive, except for certain fast express trains and they have some very high speed operations such as the Mistral, which is one that has been publicized.

Q That would be two men in the cab?

A Yes.

Q Are passenger electrics, or are they not, equipped with deadman control in passenger service?

A If they operate over 90 kilometers per hour, which is roughly 55 miles per hour, they are equipped with deadman control.

Q Looking at Exhibit 177, what comment have you to make on the photograph on the bottom? The text below the photograph says, "Rear end of a steam-operated suburban train in Gare St. Lazare, with window of reverse

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movement control cab visible to the right of the centre door opening." Would you please explain this situation to the Commission?

A This is a train which is operated in suburban service in and out of Paris. Now, coming into Paris and Gare St. Lazare, it is hauled by a steam locomotive which is manned by an engineman and a fireman. Now, when they reach Gare St. Lazare, instead of turning the equipment for the reverse movement back to the outlying point, the end of the suburban run, the engineman gets off the locomotive, walks along here to what was the rear end of the last car arriving at the station -- this is a picture of it. He steps into it and takes up a control station inside that car.

If you look at the picture, the end of the car, you see the centre window with No. 15 below it; just to the right of that you see another window and that window looks in on the engineman's control station. It is just a little box, something like you see in subway service. He takes up his station in there and runs the train in the reverse direction back to the point of origin.

BY THE CHAIRMAN:

Q The power must come from the other end of the train?

A Yes, the power comes from the steam locomotive at the other end of the train, but he has a

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set of controls here which he operates, and also there is a telephonic communication, there is a telephone if he wants to talk to the fireman, apparently. These trains commonly run eight cars and sometimes, I am told, up to ten cars. The cars have 78 seats and room for 104 standees so an eight-car train in this operation could carry more than 1400 people.

BY HON. MR. McLAURIN:

Q What is the engine, coal?

A Coal, yes, sir; hand-fired.

BY MR. SINCLAIR:

Q On the steam operations in these countries of Europe, Mr. Emerson, are they hand-fired?

A Yes.

Q For instance, on this train, is this a hand-fired steam train?

A It is a hand-fired steam locomotive, and the fireman must spend a lot of time on the deck, from the look of his face.

Q From the look of --

A From the look of his face; it is pretty black.

Q I forget whether, before our short recess, I asked you, in France, on multiple unit operation or their self-propelled operation in passenger car units, diesel-electric or electric, what is the crew assignment, in France?

A An engineman alone.

Q Now, the next one on Exhibit 174 is the

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Netherlands Railway. In view of the detailed testimony we had from Mr. Koster, I would just ask the Commission to note that, for the Netherlands Railways there are the similar comparisons Mr. Emerson has spoken to. I do not think it necessary to ask any questions about that, Mr. Emerson.

Turn, please, to Exhibit 174, the German Federal Railway, which is set out in the column here, and compare that with the Canadian Pacific?

A The German Federal Railway, as compared with the Canadian Pacific, is a slightly larger system, again about one-eighth larger in terms of miles of road.

Q It is about the same size as the British?

A About the same **size** as the British Railways. Likewise, it is approximately the same size as the British in terms of train miles, about seven times the Canadian Pacific. They have a high proportion of passenger service, 67.6 as compared with 37.6 for the Canadian Pacific. The **density** of traffic, 51.3 trains per mile of road per day as **ccmpared** with 8.5 on the Canadian Pacific.

BY THE CHAIRMAN:

Qr The picture is very close to the British all the way through?

A Yes, it is strikingly close.

BY MR. SINCLAIR:

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Q What, on the German Federal Railway, is the predominant locomotive power?

R-2 A The predominant power on the German railway is steam. They gave me a figure that, in 1956, just over three-quarters of their train miles were steam locomotive hauled and the balance were about equally divided between diesel and electric. They have a very large electrification program under way. There is evidence of it in many parts of the country. It is, again, the overhead catenary system and they intend to extend the use of diesels to branch line and also for yard service.

MR. SINCLAIR: We will file as Exhibit 178 two photographs Mr. Emerson took of German diesels.

EXHIBIT No. 178 -- Two photographs of German diesels.

BY MR. SINCLAIR:

Q Would you please mark that as Exhibit 178, Mr. Emerson?

A Yes.

BY THE CHAIRMAN:

Q Is electric power in France and Germany cheaper than diesel operation?

A Well, the European railways, generally, sir, are leaning more toward electrification rather than diesel. As to the relative cost, I am sure it is a question of economics. For one thing, as the figures show a very

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high traffic density, when you get into a very high traffic density, electrification becomes economic -- in fact, the line may cross diesel. In the second place, there is a situation in respect of fuel oil, in that the petroleum resources of these countries are limited or perhaps non-existent. It is a question of economics.

Q The electricity comes from coal, I suppose?

A Some of it would come from coal and some from water power. Of course, you get into that more in Switzerland; there is water power there.

BY MR. SINCLAIR:

Q Looking at Exhibit 178; first of all, I notice one thing in this exhibit, that these are not diesel-electric. Both of these units are diesel-hydraulic?

A That is right. The German railways are, in their dieselization program, moving in the direction of diesel-hydraulic rather than diesel-electric. That again is a question of economics and the application of the particular skills of the German industry in the manufacture of the intricate machine mechanisms that are involved in the hydraulic transmission.

BY THE CHAIRMAN:

Q We have had explained to us what a diesel-electric locomotive is, you might as well tell us what a diesel-hydraulic locomotive is?

A To give you a parallel, the diesel-hydraulic is very much like an automobile with an automatic transmission. That is as near and as short a way of describing it as I can think of.

Q That is good enough.

BY MR. SINCLAIR:

Q Looking at the first of the photographs in Exhibit 178, Mr. Emerson, that is a yard switching locomotive?

A Yes.

Q That is the type of locomotive which is in service in Germany?

A They have about 70 units of this type in service.

Q What about the crew assignment on these diesel switching engines in Germany?

A The engineman operates this engine alone.

BY THE CHAIRMAN:

Q Dead-man control?

A Yes, dead-man control and dual controls, that is on either side of the cab.

BY MR. SINCLAIR:

Q You explained earlier about the different types and practices with regard to ground

crews. What is the ground crew situation in connection with the German railways, Mr. Emerson, in their yards?

A They employ a master shunter and one, two or three shunters as required.

Q That is similar to the Netherlands, as Mr. Koster told us, and similar to the British railways as you have told us?

A Yes.

BY THE CHAIRMAN:

Q May I take you back for a moment to France and Exhibit 177. You did not tell us whether the locomotive at the top, the diesel-electric locomotive, had dual controls?

A It has two cabs, one cab at each end of the locomotive and each cab has a control. The controls are in the corner on the left-hand side so there is one control at each corner as it were.

BY MR. SINCLAIR:

Q What generally is the practice on the British railways, they are a left-hand operation?

A The British are left, the French are left and the Netherlands *to right, R. 437*

BY HON. MR. MARTINEAU:

Q Is not the rule of the road in France to the right?

A On the highways, but on the railways it

is not in that their trains run to the left. The Netherlands run to the right; Germany runs to the right; the Swiss run to the left.

Q The rule of the road is to the right in Switzerland?

A Yes.

BY MR. SINCLAIR:

Q Taking the locomotive at the bottom of Exhibit 178, the second of the two photographs; what is your comment about that?

A This is the most recent type of road locomotive. In fact I think it is fair to say it is almost the first large locomotive of the diesel-hydraulic type developed on the German railways. It is a 2,000 horse-power unit and they have five in service and 45 on order, so it has not been used to a large extent up to the present.

Q Does it have dead-man control?

A It has two cabs, again one at either end and a set of controls in each cab and dead-man controls.

Q Is this being used in freight service?

A Yes.

Q What is the crew assignment with this locomotive in yard service, that is the second photograph on Exhibit 178?

A In freight service there is an engineman and conductor on the locomotive, except that when there is less than 30 axles trailing a conductor is not required to be on the locomotive.

Q Is that the whole crew of the train, two men?

A That is the whole train crew.

Q What if they want to do switching en route?

A If they want to do switching en route they carry one or two shunters additionally or in some instances I understand that they secure the assistance of the local station staff to help them.

Q They go across the road with two of a train crew and then use the station staffs if required?

A That is possible.

Q In steam operation, Mr. Emerson, in Germany, are they hand-fired steam engines?

A Yes.

Q They would have a fireman?

A They carry a fireman and an engineman.

Q And a conductor or trainman?

A As required.

Q As you have explained.

BY THE CHAIRMAN:

Q Have they any freight diesels in Germany of the road switcher type?

A No, I think not.

Q If they only have five of the type shown on the bottom of Exhibit 178, what would be the make-up of the diesels as shown on Exhibit 178 as far as yard switchers are concerned where you show 905 diesels?

MR. SINCLAIR: Only 20 of those are over 350 horse-power.

THE WITNESS: Yes.

BY THE CHAIRMAN:

Q 885 would be for yard service?

A Those are the very small units they have in operation in Germany, diesels, diesel-electric, diesel-battery, electric-battery; almost every conceivable combination is used in these very small switching operations. Also I think they have a few of the larger types, but nothing as modern or comparable to the one I have shown.

Q What about the 20 over 350 horse-power?

A The 20 over 350 horse-power, that was at the end of 1955. I do not know just when they got these V-200, 2,000 horse-power, but I would think not any of these probably. There may have been some 600 horse-power units. Also they have 1,000 horse-power units, which they use primarily I think in branch line service. They have only 10 of those as I recall it.

BY MR. SINCLAIR:

Q Are they of the car body type, Mr. Emerson, those last 10?

A The last 10 are roughly similar to the V-60, 600 horse-power type we are looking at.

BY THE CHAIRMAN:

Q The V-60 is the 600 horse-power; what is this other one?

A The V-200.

BY HON. MR. McLAURIN:

Q The diesel-hydraulic does not have a generator like the diesel-electric?

A No, nothing except for lighting, auxiliaries and that sort of thing.

Q How is the power transferred to the axles on a diesel-electric?

A There is a complicated series of shafting which they call Cardan shafts. This V-200, which is the 2,000 horse-power unit, has two 1,000 horse-power diesel engines mounted in approximately the centre of the body of the locomotive. Then each engine is in turn connected to a hydraulic transmission. The power output from the hydraulic transmission is taken by shafting with universal joints in it down to the trucks. So you have one engine that drives one truck and the other engine drives the other truck.

Q From a technical point of view you say

that the diesel-hydraulic is similar to an automatic transmission?

A Yes.

Q That is the technical explanation, but to me as a layman, looking at both of these the thing that strikes me as being most distinctive is that with the diesel-electric you have this huge generator and with the diesel-hydraulic you would not have that?

A No, it has no generator, but in place of the generator it has this hydraulic transmission which is quite a large piece of mechanism, not quite the same dimensions as this desk.

Q It is in no sense a generator?

A No, it is comparable to the hydraulic transmission in your automobile.

BY HON. MR. MARTINEAU:

Q Is not that very similar to what exists on the Budd cars?

A Yes, in a way; that is a hydraulic transmission also, but these are rather more complicated. They have a number of fluid couplings in them with torque converters. The general principle is that according to the speed of the locomotive one torque converter will come in and as the speed picks up that torque converter will go out and the next torque converter

will follow. It is a matter of the ratio of speed in order to get the transition up the line, and you finally get into the last stage. Again it is similar to the hydraulic transmission in an automobile.

BY HON. MR. McLAURIN:

Q The hydraulic-diesel has not been accepted on this continent for road and yard service?

A No, not on this continent, not with locomotive units. There again that is probably due to the difference in the industrial make-up of the different countries. This country is evidently better equipped to turn out the electrical components from our electrical manufacturing plants at a relatively lower cost than the hydraulic transmissions. These hydraulic transmissions are very intricate machines.

Q I was in the Calgary yard the other day with a representative of the brotherhood and of management and they said they had one of these diesel-hydraulics running around and they were wondering whether they were going to be adapted to yard service.

A We have two of them and they are now -- whether they have arrived I have not heard in the last few days -- in Western Canada for service there. They are much

smaller than this type.

MR. SINCLAIR: They are on an exhibit which was put in earlier this morning. They are the ^{two}~~2~~44 tonners.

BY HON. MR. McLAURIN:

Q They are for light yard service?

A Yes. One is intended to be used at Portage la Prairie and the other at Yorkton, Saskatchewan.

Q In the yard?

A For switching movements.

HON. MR. McLAURIN: I do not think I will ever displace a master mechanic.

BY MR. SINCLAIR:

Q Then with regard to the Swiss Federal Railway, Mr. Emerson, would you just look at Exhibit 174 again and take a run through that giving a run-down comparison with the Canadian Pacific?

A Yes.

Q This railway is more along the lines of the Netherlands Railway, is that right?

A That is right.

Q As to size?

A As to size. To compare it with Canadian Pacific, it is roughly one-tenth of the size in terms of road miles. The train miles are just about 80 per cent of Canadian Pacific, 43,562 as compared to 52,905. The percentage of passenger

trains of total train miles is quite high, 72.2 as compared to 37.6 for the Canadian Pacific. As we mentioned earlier, the density is the highest of all the railways I visited, 67.3 trains per day per mile of road as compared to 8.5 for the Canadian Pacific.

Q As to motive power, what is the predominant type of motive power used?

A Electric motive power has by far the greatest use in Switzerland.

Q Is electric motive power used both in road, passenger and yard service?

A Yes, sir.

Q In all three services?

A In all three services.

BY THE CHAIRMAN:

Q Overhead or third rail?

A Overhead.

BY MR. SINCLAIR:

Q You have two photographs of electric locomotives used in Switzerland which I would ask to file as Exhibit 179. These are photographs which you took when you were over there?

A Yes.

EXHIBIT No. 179 -- Photographs,
locomotives,
Swiss Federal
Railway.

BY MR. SINCLAIR:

Q Looking at Exhibit 179, Mr. Emerson; the

first of the two photographs on this exhibit which is headed "Swiss Federal Railways," is that of an electric yard switching locomotive with weight on drivers, 98,000 pounds, 700 horse-power. What is your comment on that?

A This locomotive is equipped with dual controls. It has no dead-man control. It is operated by the engineman alone who works in conjunction with the yard crew consisting of a shunt master and one, two or three shunters as required.

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The Swiss have very few diesel locomotives. I did not see them. But they are similarly manned, and also like the Netherlands Railways they operate some small steam locomotives in the same way, that is, without the fireman in yard service.

Q And like the Netherlands Railways this ground crew, this master shunter and one, two or three assistant shunters, or whatever the phrase is that you used, they are not married to the locomotive?

A No.

Q They are not married to the locomotive?

A No.

Q One crew may work with two locomotives or three?

A Yes, in sequence.

Q Now, the second of these photographs on Exhibit 179, this is the one you referred to earlier, I think, as being a 6000 horsepower type of electric locomotive?

A Yes, that is right. It is one of the newer types built for both passenger and freight service on the Gottard line, which is one of the main routes between Germany and Italy and passing through Switzerland, and passes through the Gottard tunnel. It has two cabs, one on either end of the locomotive, and a set of controls in each cab. It is equipped with dead-man controls and is operated by the

engineman alone except, first, in passenger service if the non-stop distance exceeds 60 kilometers, that is, 37 miles.

BY HON. MR. McLAURIN:

Q Except in passenger service where the non-stop distance exceeds --

A Sixty kilometers or 37 miles, yes, or the engineman runs alone in passenger and freight except between 12 midnight and 6 a.m., subject to further exceptions, (a) for trains arriving up to 1.30 a.m. and (b) trains leaving after 3.30 a.m., providing the engineman has had 60 minutes rest.

HON. MR. MARTINEAU: That reads like an insurance policy, with so many exceptions.

THE WITNESS: Let me see if I can make it clear.

HON. MR. McLAURIN: It is all right. We will go to the transcript for it.

MR. SINCLAIR: As soon as I finish this I have arranged to put in through Mr. Emerson a summary showing the crew assignments for all these railways. I thought it would be kind of helpful to have them all together, and I will have some comment on it. The footnotes set this out and, as you say, sir, the exceptions have to be watched because they are not universal exceptions. They are exceptions to exceptions, depending upon certain conditions.

HON. MR. McLAURIN: That means if

you take the train from Geneva to Lausanne, Lausanne to Berne, Berne to Lucerne and over to Zurich, you are getting over 37 miles all the time?

THE WITNESS: If it is non-stop. It could be.

BY MR. SINCLAIR:

Q But if they stop this man runs alone?

A That is right.

MR. SINCLAIR: I would think that maybe these hours and exceptions arise from labour agreements by the look of them. The provisions as to after twelve, but if you arrive before and things of that nature are things that you generally find in labour agreements.

MR. LEWIS: I suppose these conditions are all in labour agreements of one sort or another.

THE WITNESS: They have conditions in agreements.

MR. SINCLAIR: They arise from labour agreements.

BY THE CHAIRMAN:

Q I suppose the reason for this non-stop distance is a matter of rest for the operator?

A I really don't think it is that. I think it is rather a question of just a break.

Q I mean a break from tension or attention?

A A break from attention, yes.

Q In connection with the yard switcher at the top of Exhibit 179 I am not sure whether or not you said that it had dead-man control on it?

A No sir, it does not.

BY HON. MR. MARTINEAU:

Q What about these trains which we read about in France, the one running from Paris to Bordeaux non-stop, which is nearly 400 miles?

A I didn't know there was one ran that distance non-stop.

Q They have got some very long non-stop runs?

A They have some quite long non-stop runs, yes.

BY MR. SINCLAIR:

Q Such trains as that would be steam-hauled?

A I would not think so. They would be partly electric and partly steam at the present time, but I believe that is a change en route.

HON. MR. MARTINEAU: I think it is all electric.

MR. SINCLAIR: Electric throughout.

THE WITNESS: That may be.

BY THE CHAIRMAN:

Q Does that rule operate in France?

A No sir, this is Switzerland.

Q With respect to the dead-man control on the electric road freight and passenger locomotive at the foot of Exhibit 179, how does that operate?

A It operates virtually just the same as it operates in this country.

Q By the foot, is it?

A Actually in this particular locomotive it is both a foot treadle -- no, I am sorry, this

- . one operates on the foot treadle, and if the engineman takes his foot off the treadle he starts to get a warning whistle and if within a period of about six seconds he does not put his foot back on or make a brake reduction, brake application, then the dead-man control device applies and the train is brought to a stop.

Q Is that the same as the control on your diesels?

A Yes, virtually the same.

Q Operates the same way?

A It operates exactly the same.

Q There is a dead-man control, whether or not you call it that, on your modern Toronto street car, is there not?

A Oh, I think so, yes.

Q But that operates not from the foot but from the hand, does it not?

A As to the Toronto street cars, I don't know. I never looked at it. It is quite possible. It is quite common on occasions to have these dead-man controls hooked in with the hand throttle lever or controller.

Q You say that is common. Where is it common?

A You can see that, for example, in Britain on this electric multiple unit operation which I was describing, the bottom photograph of Exhibit 175. It operates on that. That is a hand control device.

Q Is that not easier from the standpoint of the operator than the foot control?

A I don't think I have ever heard an expression of opinion one way or the other. Offhand I don't know of any reason why it should be.

T-2

Q Well, it has been suggested here, I think, that you might have an engineman with his foot on the dead-man control and taking a seizure which would not withdraw his foot but if you had it on the throttle you would be less likely to run into that kind of situation. What would you say as to that?

A I would think that the possibility is very remote in either case, but I can conceive from looking at these controls that it would be possible, putting in the outside realms of possibility, that a man with his hand on one of these hand levers could slump and hold it down.

Q Then you think the chances are even?

A I do not see any reason for making a distinction between one or the other on that basis, no.

BY MR. SINCLAIR:

Q Are there any of these dead-man controls anywhere where they have both foot and hand?

A Yes, the German Railways, this V-200 I think is both foot and hand, so in that case as long as he has either the hand control lever down or his foot on the treadle the dead-man control is nullified.

HON. MR. McLAURIN: He is busy keeping it in place.

THE WITNESS: The point is he is rather freer than the other individual because as long as he has either one of them --

BY THE CHAIRMAN:

Q He can move his foot and keep his hand there?

A That is right.

MR. LEWIS: Excuse me for interrupting. I understand he does not have to have both effective in order for it to function.

MR. SINCLAIR: That is what he said, either the one or the other.

BY MR. SINCLAIR:

Q Now, in freight service on the Swiss Railways, what is the crew on these electrics?

A Well, the crew is the engineman alone with a helper required under the conditions which I just outlined.

Q When he is alone does he make running inspections of his train?

A Yes, he does.

Q On both sides?

A On both sides.

Q How does he do that?

A They have a rather ingenious device. The Swiss Railways, as I explained, run to the left. If you look at the photograph on the bottom of Exhibit 179 the controls, facing the locomotive, are at the right-hand window.

That is the one with the windshield wiper straight up and down. Over on the opposite side of the cab there is another dead-man control which is a button on the wall and at the appropriate time, say when he is rounding a right-hand curve and he wants to go over and examine that side of the train he leaves his operating station, releases the dead-man controls, and of course he has approximately six seconds to cross over to the other side of the cab, put his hand on this dead-man control and recover from there, and then while he has his hand on that control he puts his head out the window, looks along the train to make a running inspection and when he is satisfied everything is all right he goes back and returns to his driving station.

Q Now, when they are in freight service and they have to do switching en route, who does it? Who assists in it?

A Well, the helper -- on their crew assignment the helper on the locomotive if he is carried counts as a brakeman and assists in coupling and uncoupling and switching. The Swiss Railways again have a formula for the assignment of train crew, and if I remember it correctly, on flat country up to 50 trailing axles, they require a trainmaster alone.

Q A trainmaster?

A A trainmaster alone, the trainmaster on the

train and the engineman on the engine.

BY THE CHAIRMAN:

Q The trainmaster is the conductor?

A Yes, that would correspond to what we call a conductor. From 51 to 100 axles they require a trainman additional and from 101 to 150 axles a second trainman. I think I had better look at my notes, if I may.

BY THE CHAIRMAN:

Q How many axles to a car?

A Generally two. No, I am sorry, my memory is playing tricks with me. On flat country, what they call flat country, up to 80 trailing axles behind the locomotive a trainmaster alone.

BY MR. SINCLAIR:

Q That would be 40 cars?

A That would be 40 cars.

Q They have what?

A A trainmaster alone.

Q That is a crew of two?

A Besides the engineman, of course, on the locomotive.

Q That would be a crew of two?

R.A.Emerson

A That is right. Now, then, from 81 to 150 axles they employ a brakeman additional.

Q That would be a train crew of three?

A Right. Now, on the country that is not flat -- and they call that 2.5 per cent grades and over -- up to 50 axles, they employ a trainmaster. From 51 to 100 axles they employ an additional trainman and from 101 to 150 axles, a second trainman.

Q Now, you spoke about 2.5 per cent grades and over. Everything under that they call flat?

A Yes, it falls into the other category of flat country.

Q What is the maximum grade on the main line of the Canadian Pacific Railway?

A 2.2 per cent.

Q We have heard some evidence here today about the Mountain subdivision. The maximum grade there is 2.2 per cent?

A Yes.

Q And in Switzerland they would call that flat country?

A Yes, that would be flat country.

THE CHAIRMAN: Everything is relative, Mr. Sinclair.

BY MR. SINCLAIR:

Q Well, what about the speed on the Swiss railways in the mountains, Mr.Emerson?

A I should explain before I leave this other



R.A.Emerson

point that in this question of crew assignments on the train that if the helper is on the locomotive by virtue of the fact that is an operation, let us say, between 12 midnight and 6 a.m., then he counts as one of this train crew.

Q I think you did explain that and I have only two or three questions to finish up this Swiss matter. What is the speed of the operations in the mountains in Switzerland compared with our operations on the Canadian Pacific, Mr.Emerson?

A Well, it is faster.

Q Faster where?

A In Switzerland.

BY THE CHAIRMAN:

Q Twenty-four miles here.

A Pardon?

Q Twenty-four miles here over the road?

A Well, I was thinking of it rather in terms of maximum speeds permissible rather than average running speeds.

BY MR. SINCLAIR:

Q The maximum speed on the Canadian Pacific freight in the mountains would be what, subject to check?

A Oh, subject to check, between Field and Revelstoke and excepting the portion between

REPORT OF THE
COMMISSIONER OF THE
LAND OFFICE
FOR THE YEAR
1880
CONTAINING
A SUMMARY OF THE
LANDS BELONGING TO
THE UNITED STATES
AND A LIST OF THE
LANDS SOLD OR
LEASED DURING THE
YEAR
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R.A.Emerson

Golden and Donald, I think it is about 30 miles an hour.

Q And in Switzerland in their mountain territory the maximum speed would be about what?

A I do not think I have a note of that. Their maximum speed on freight trains generally is 65 kilometres per hour which is about 40, except that on perishable trains -- what they call food trains -- it runs up to 90 kilometres per hour and on these food trains which are all air-braked and have good equipment they carry a relatively smaller crew. On the food trains they have the train master alone and they go up to 90 kilometres on all territories both flat country and grades of 2.5 per cent and over.

Q How would the snow conditions and winter conditions generally in Switzerland compare with the situation in the mountains in Canada? Would you know that?

A From my observations on the Gotthard line, the snow was very heavy. They obviously get heavy falls of snow. I saw rotary snowploughs in action and evidences of slides having been down, although this past winter was a very mild one generally in Europe with relatively light snowfall.

Q Generally speaking, how would you generally compare the operations in Switzerland with mountain operations on the Canadian Pacific?

R.A.Emerson

Is there any general comparison that struck you, Mr.Emerson?

A Well, there is a comparability of conditions. The terrain is quite similar. You get up to a place like Goeschenen and it almost looks like Glacier. There is a long tunnel there about 16 kilometres -- that is about 10 miles -- double track. It is all electric operation, of course. ^{In that} ~~The net~~ ^{is} area is double track line, with numerous tunnels -- configurations very much like our spiral tunnels but with relatively light curvature. The curvature is not as sharp and that accounts for the train speeds being higher. It is possible to run faster.

BY THE CHAIRMAN:

Q It accounts for what?

A It accounts for the train speeds being higher. It is possible to run higher because the curvature is not so restrictive.

BY MR. SINCLAIR:

Q The Connaught tunnel was mentioned by Mr. Hooley and I meant to ask him is that or is it not double track throughout?

A Yes, it is double track; five miles.

MR. SINCLAIR: I could go on, gentlemen.

THE CHAIRMAN: Well, I think we will adjourn now.

-- The Commission adjourned at 4.05 p.m. until 10.00 a.m. Tuesday, May 7, 1957.

Amended
— 32

ROYAL COMMISSION ON EMPLOYMENT OF FIREMEN
ON DIESEL LOCOMOTIVES IN FREIGHT AND YARD
SERVICE ON THE CANADIAN PACIFIC RAILWAY

32

PROCEEDINGS

DATE: May 7, 1957

PLACE: Ottawa, Ont.

PAGES: 4394 - 4538

VOLUME: 32

E. L. FEATHERSTON
SHORTHAND REPORTER
241 MANOR AVENUE
ROCKCLIFFE PARK
OTTAWA, CANADA

Mr. Hughes

- A -

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 26

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
3478	9	I read both steam and diesel	I ride both steam and diesel
3486	6	shute at Renfrew	chute at Renfrew
3493	2	turbine charger	turbo charger
3496	12	twenty-five seconds	twenty-five minutes
3499	16	relay to break	relay to trip
3500	14	engines over the	engines off the
3501	15	up on track	up on train
3501	23	No. 5 train	No. 905 train
3522	23	broke the WS-2 relay	blocked the WS-2 relay
3542	6	take his train	take his turn
3544	16	safe space in	safe place in
3560	9	reset the engine load with	rest the relay and the engine loaded with
3561	17	was due	was also due
3561	25	was the 915 between	was on unit 1915 between
3562	17	pump. There	load. There
3571	14	a minor pressure	a minus pressure
3571	16	pressure unless it	pressure, thus it
3573	6	you lock your	you lap your
3574	14	down. You	off. You
3574	16	and lock your	and lap your

- E -

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 27

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
3622	18	exhaust flags on	exhaust legs on
3626	9	down to low	down for low
3646	18	Mr. D.A. Dauthrey	Mr. D.A. Daughtrey
3647	13	Mr. Daughrey	Mr. Daughtrey
3647	17	a ruling for	a railing for
3660	22	off and they	off a note that they
3668	22	chasing of circuits	tracing of circuits
3672	9	train books	train rules
3689	4th last	in the small	in a small
3702	11	Wabish Lake	Wabush
3703	4th last	700 feet	300 feet
3724	16	are road foreman	our road foremen
3735	9	that are Mile 225	at our Mile 225
3736	6-8	Our road crosses it on switching. There is nothing at Schefferville.	our road crews do the switching at Schefferville.
3737	3rd last	telephone station	telephone system
3746	23	overtime	work

ERRATA

Please make the following corrections
in the volumes and on the pages indicated.

Volume 29

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
3938	16-19	The diesel units, as I recall it, 26, 28 20 2,000 horsepower Fair- banks Morse and 8 -- no, I am wrong. There were 32 -- 34, 7 14,000 horsepower electric motive --	The diesel units as I recall it were 20 - 2,000 horsepower Fairbanks, Morse; two Alco, and 12 - 2,000 horsepower Electro- Motive or General Motors.
3938	29-30	700 diesel units	800 diesel units
3954	18	1,600 volts	1,500 volts
3961	3	Chicago South Shore and Milwaukee	Chicago, South Shore and South Bend
3962	26	to connections	from connections
4114	10-11	We have had rear- end	We have had head- rear-end
4122	3	you are vice president	you are asst. vice president
4123	8-9	the following, on locomotives	the following of locomotives
4123	17	but would not be a week	but there would not be a week
4123	22	in the motor power shops	in the motive power shops
4124	11-12	the dynamometer motors	the dynamometer car
4124	18	motive power and your	motive power and car
4125	25	Assistant to the Vice-President	Assistant Vice-President
4126	3	acted as Deputy	acted as deputy
4126	13-14	the regional districts and	the regional, district, and
4126	18-19	naturally, there are some reports, if they are reports of important accidents	naturally, some reports, of important accidents,

Volume 29 (cont'd)

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
4132	26	to present excessive smoke,	to prevent excessive smoke
4133	24	direct from the grounds	direct from the ground
4136	2	side of the cab could take	side of the cab must take
4150	2		BY MR. LEWIS (to be inserted)
4154	19	You will find it stock	You will find its stock
4157	8	and they other one	and the other one
4168	4	would call main line, it is branch line from	would call branch line, it is main line from
4172	18	yard engine ticked on	yard engine kicked on
4174	30	a 660 horsepower N.L.W. switcher?	a 660 horsepower M.L.W. switcher?
4180	23	What is the equip- ment on	What is the position on

Volume 30

<u>Page</u>	<u>Line</u>	<u>Now Reads</u>	<u>Should Read</u>
4185	23	be done other members	be done by other members
4189	2	doubts in mind mind at	doubts in my mind at

I N D E X

Witnesses

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Exam. by Mr. Sinclair	4396

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181 - Accident statistics - C.P.R. and certain European railways	4413
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183 - Photo, Lake Erie and Northern Electric locomotive No. 333	4419
184 - Bulletin, Diesel engine crews ..	4438
185 - Trip reports, R. A. Emerson.....	4467
186 - Analysis of trip reports	4473
187 - Employee fatality and injury ratios	4498
188 - Fatalities per 1000 employees, C.P.R. and European railways ...	4500
189 - Average coal consumption, passenger and freight services, 1925	4513
190 - Comparative passenger train accidents	4516

ROYAL COMMISSION ON EMPLOYMENT OF
FIREMEN ON DIESEL LOCOMOTIVES IN
FREIGHT AND YARD SERVICE ON THE
CANADIAN PACIFIC RAILWAY

Proceedings of public
hearing held at Ottawa,
Ontario, Tuesday, May 7,
1957

PRESENT:

Hon. R. L. Kellock,	Chairman
Hon. C. C. McLaurin,	Member
Hon. Jean Martineau,	Member
Douglas M. Fraser,	Secretary
A. R. Winship,	Asst. Secretary

APPEARANCES:

D. W. Mundell, Q.C., C. J. A. Hughes, Q.C.,	Representing the Commission
I. D. Sinclair, Allan Findlay,	Representing the Canadian Pacific Railway Company
David Lewis,	Representing the Brotherhood of Locomotive Firemen and Enginemen

Tuesday,
May 7, 1957.

32nd DAY

MORNING SESSION

----The Commission opened at 10.00 a.m.

R. A. EMERSON, recalled.

EXAMINED BY MR. SINCLAIR:

Q Mr. Emerson, just before adjournment yesterday we were discussing the Swiss Federal Railways and I want you to tell the Commission whether self-propelled operations and MU operations have been adopted in Switzerland?

A Yes.

Q What is the crew assignment in Switzerland on that type of passenger train operations?

A The Swiss railways operate self-propelled cars. As indicated by Exhibit 174 they have 98 such units which are electric operation and two diesels. It is primarily electric. They operate in multiple and the crew assignment on the head end is an engineman alone except that they carry a helper when there are no passengers on the train.

Q When there are no passengers they add another man?

A They add a helper.

Q That would be when the equipment would be dead?

A Yes, when it is being moved light for one purpose or another from one point to another.

Q When they are operating with passengers

would there be a guard back in the train?

A There would be a guard back in the train.

Q And dead head he would not be there?

A I don't suppose so, no.

Q So that would make a train crew of two?

A Yes.

Q You spoke yesterday of the number of instances which are based on exceptions of electric and diesel operations in Switzerland where there were two men in the cab?

A Yes.

Q What is the trend in Switzerland in regard to the number of men on the head end of trains, passenger and freight, or in the cab in yards; what is the trend?

A The arrangement which I have outlined has resulted in a helper being employed on the Swiss Federal Railways for 20 per cent of the train miles in road movement.

Q That is passenger and freight together?

A Yes. For 20 per cent of the train miles the engineman is accompanied by a helper. When I was in Switzerland the president of the Swiss Federal Railways told me that they had under revision the rules or regulations under which a helper is required for the purpose of reducing the conditions under which a helper would be needed, and that they expected it would bring about a reduction in the train miles on which a

helper is employed from 20 per cent to 10 per cent.

Q Am I right in saying that that would result in 90 per cent of the electric and diesel operations in Switzerland having only one man in the cab?

A That is correct.

Q What about yard operations on the Swiss Federal Railways, Mr. Emerson? I think you said yesterday something about the crew assignments.

A An engineman alone.

Q An engineman alone?

A Yes.

Q Have you any information concerning the type of yards they have in Switzerland?

A Yes. I looked up my papers last night and I found reference to a large yard at Rennes, which is near ^{Lausanne} ~~Lauzon~~. That is a flat switching yard. It has 30 body tracks and handles 2,400 cars a day. At the figure given that would on our terms be a car count of 4,800 and would be comparable to Lambton.

Q It is a little in excess of the Lambton figure?

A Yes; Lambton is about 4,500, I believe, at the peak.

Q What about yard operations on the other European railways you have spoken about?

Have you any information for the Commission on that?

A Yes, I have some information on the situation in Britain.

BY HON. MR. McLAURIN:

Q The European vans are not as large?

A The wagons are not as large.

Q Should we not take that into consideration in making a comparison?

A I wonder just what difference it makes really whether you are switching a larger wagon or a small one; it is the same basic movement.

Q The same procedure?

A Yes.

BY MR. SINCLAIR:

Q You said you have some information with regard to Great Britain?

A Yes. The photograph at the top of Exhibit 175 was taken in Temple Hill yard. Temple Hill yard is a non-automatic hump in conjunction with flat switching. The daily count, which includes some yard to yard transfers and some double counting runs approximately 5,000.

Q Your evidence again as to crew assignments on diesels in that yard is what?

A Engineman alone. There are six other large yards, and I do not put this on the basis that they are the only large yards.

Q In Great Britain?

A In Great Britain, but the six others which are predominantly flat switching are Willesden which handles 3,200 cars per day. Bescott, near Birmingham, 2,500. Basford Hill, near Crewe, 6,400. Warrington, 3,650. Wellingboro, 2,500. Burton, 4,500.

Q Those are the car count figures?

A Those are the cars handled at the yard. In other words, to make it comparable to Lambton those figures would have to be doubled. As to the situation on the other railways, I am endeavouring to secure some more information.

Q As far as the Netherlands was concerned it was dealt with in Mr. Koster's evidence with some particularity but if you are able to develop some further information or some further figures an opportunity will present itself to give them to the Commission.

BY THE CHAIRMAN:

Q You spoke about the difference in size of the European rolling stock in comparison with the Canadian Pacific; what about box cars?

A I have those figures, I took them off, but I cannot put my hand on them at the moment. May I come back to that point?

Q What I really had in mind was the space between tracks. I understand that at

Lambton, for instance, there are parallel tracks where the clearance is three feet. What would be the comparable situation in these other yards?

A I think it would be quite comparable because the European cars are very close to the same width as the cars on North America, but I have that figure.

Q It would be better to get it accurately.

MR. SINCLAIR: We have it all worked out but I cannot put my hand on the sheet.

BY HON. MR. McLAURIN:

Q Are the gauges the same on the European railways?

A All of the railways on this exhibit are standard gauge, 4 feet 8-1/2 inches or 1.4-odd metres. Yes, I have that information here. The length over buffers of the European standard box car is 34 feet 9 inches. The comparable figure for the latest Canadian Pacific standard box car is 44 feet 4 inches.

The width over-all of the European standard box car is 10 feet 3 inches. The maximum width of a Canadian Pacific standard box car is 10 feet 7-5/8 inches.

The height above the top of the rail of a European standard box car is 13 feet 1 inch. The Canadian Pacific standard box car is 15 feet 0 inch and 19/32.

BY THE CHAIRMAN:

Q You do not know what that means in the way of clearance between tracks, for instance, in the European yards?

A Very little, but I would like to look up the gauge spacing between tracks.

Q If it is worth getting it is worth getting accurately.

MR. SINCLAIR: We will get that information later.

BY MR. SINCLAIR:

Q Now, Mr. Emerson, based on your observations in Europe and your discussions with European operating officers, how would you compare the European operations with those of the Canadian Pacific?

A In comparing European operations with the Canadian Pacific there are certain differences. The European trains are generally shorter.

BY THE CHAIRMAN:

Q That is fewer cars?

A Yes, sir. The traffic of course is much more dense. As the figures indicate, there is more multiple track operations and there is a much higher proportion of passenger trains to the total.

BY MR. SINCLAIR:

Q What about signals?

A The European operations generally are conducted by signal indication and in some instances automatic train control is in use.

BY THE CHAIRMAN:

Q Signal indication meaning manual?

A It can be either manual or automatic, sir.

BY MR. SINCLAIR:

Q Those are some of the differences with respect to the European systems which can be said to be on one side. Are there any on the other side?

A Yes. European equipment is not fitted with automatic couplers. There are substantial numbers of cars that are not equipped with air brakes. The warning devices on the locomotive are much inferior to those in use on the Canadian Pacific as to the headlight, bell and whistle.

Q And would train handling be affected by what you have said? Density and brakes both would affect it? One would affect train handling and one would affect movement over the road?

A Yes, they would both be affected.

Q Taking these various differences that you have mentioned and weighing them in the light of your experience and knowledge of railway operations, what conclusion would you arrive at in regard to operations as a whole in Europe as you have observed them and

discussed them and operations on the Canadian Pacific as you know them?

A I conclude that the result is not a reduction in responsibilities of the engine crew on European railways as compared with Canadian Pacific.

Q Just to put in juxtaposition to that the evidence you have given, Mr. Emerson, I think you said it before but I should like to have it here, that the crew assignments in Europe on road operations are what?

A Well, I have given in detail the assignments but it may be summarized in this way, that in no instance on the European railways are three men employed on the head end in road movement and in no instance with diesel or electric power are two men employed on the locomotive in yard switching.

Q As I mentioned yesterday --

THE CHAIRMAN: Just before that, Mr. Sinclair, I would ask the reporter to read the second last answer.

--Reporter reads:

"I conclude that the result is not a reduction in responsibilities of the engine crew on European railways as compared with Canadian Pacific."

BY THE CHAIRMAN:

Q I am not sure I have your idea. Would you amplify that?

A Yes sir, that weighing these different factors, these different conditions -- I will put it the other way -- there is no more responsibility, strain, need for close attention on the part of engine crews operating on Canadian Pacific than there is for engine crews operating on the European railways.

Q Thank you.

MR. SINCLAIR: Mr. Chairman, as I mentioned yesterday, we have prepared a synopsis which I should like to put in as Exhibit 180. It is headed, "Crews on the head end of trains, European Railways". It has a very slight amount of additional information that I do not think Mr. Emerson has given but it does bring into one document some of the evidence that he has given as to crew assignments.

EXHIBIT NO. 180: Crews on the head end
of trains, European
railways.

BY MR. SINCLAIR:

Q You have it before you, Mr. Emerson. Would you please mark it as Exhibit 180?

A Yes.

Q Now, just what is your comment on this exhibit and what point do you draw from it that you think would be of assistance to the Commission?

A This exhibit shows at a glance, referring to the bottom line, that in yard service, diesel

or electric operation, in all instances the engineman operates alone.

BY THE CHAIRMAN:

Q What is the column headed "M.U."?

A That is multiple unit operation, sir, which may be either diesel or electric and comparable, as we spoke yesterday, to the Budd cars.

Q I just did not appreciate the abbreviation.

A Right, sir. It also shows that in freight service there is no instance in which three men are required on the head end of trains.

BY MR. SINCLAIR:

Q And the footnotes would show with respect to freight service when there would be one man on the head end if there are two men shown in Exhibit 180?

A Yes, the footnotes in conjunction with the statement I think make the situation quite clear. There perhaps is one note I should add or clarify and that is with respect to footnote 6 which you will notice refers to the German Federal Railway freight train operations, diesel and electric, and the note reads:

"If train has less than 30 trailing axles, conductor not required."

That is to say, the conductor is not required on the engine. That might be clarified by "on engine", the addition of "on engine" after the word "required".

Q Somewhere on the train, but then you add, "conductor not necessarily in same cab as engineman", and as you explained in evidence yesterday with two cabs he might be --

A In the trailing cab.

Q Or back on the train?

A Yes.

BY THE CHAIRMAN:

Q Well, in your block which deals with the British Railways, opposite the heading "freight" you have nothing under "diesel" or "electric"?

A Yes sir, because as I think I mentioned yesterday the use of diesels in freight service on the British Railways up to the time I had been there was very limited. It was just on an experimental basis, you might say. The electric operations on the British Railways again do not play a large part up to the present time although I think there was some electrification installed last year.

BY MR. SINCLAIR:

Q Exhibit 174 which is as of 1955 showed under that heading only 71 electric locomotives?

A Yes.

Q Out of 18,000 odd locomotives on the British Railways?

A Yes. I should make it clear that when I say they do not play a large part that refers to locomotive hauled operations

apart from these multiple unit passenger operations in the southern part of England.

BY THE CHAIRMAN:

Q So far as the British Railways are concerned, with respect to diesel or electric locomotives the exhibit shows that there are none in freight service?

A As to electric I would not say there are none. There may be a few. It certainly does not play a large part. I was up in the northern part of England and I did not see it.

Q Whatever the crew assignment is, if they do use these locomotives in freight service we do not know as far as this exhibit is concerned?

A No, it is not shown on this exhibit, sir.

BY MR. SINCLAIR:

Q But as I take it from the evidence you have given, Mr. Emerson, in any event the crew on the locomotive on the head end, in the operating cab, would not exceed two?

A No, no.

Q That is correct?

(2) A That is correct.

Q The question in your mind as I think your evidence was yesterday was the situation as to where there was only one?

A I am virtually certain that they carry firemen up to the present time. Otherwise they would not be having this dispute with the

union with respect to firemen on diesels because a precedent would already be established.

Q Now, Mr. Emerson, is this Exhibit 180 evidence of the change in crew assignment that resulted in the application of electric and diesel motive power in Europe? Is that evident from this exhibit?

A I think it stands out quite clearly in reading across the columns the reduction in many instances to one person on the engine and the elimination of the fireman.

Q And the elimination of the fireman in some cases did result in the rearrangement of where the balance of the crew rode?

A Yes.

Q But I take it that the firemen when there were no fires to fire left the employ? Is that correct?

A No, I would not say he left the employ.

MR. LEWIS: I do not suppose it really matters but the wording of that question riled me a little. However, I do not suppose it matters. To say that when there was nothing to fire the fireman left the engine seems to me hardly a proper question at this point.

THE CHAIRMAN: Well, where are we then?

MR. SINCLAIR: I will put it another way for my friend.

BY MR. SINCLAIR:

Q Mr. Emerson, based on your analysis of the situation, when the firemen had nothing to do with electric and diesel traction coming into use on the railways what happened to them?

MR. LEWIS: If my friend is going to put it that way I am going to object, when the firemen had nothing to do. The witness has not said that with respect to Europe. I have no doubt the witness would but I do say that perhaps the question could be worded differently.

THE CHAIRMAN: Will you try again?

BY MR. SINCLAIR:

Q Mr. Emerson, from your analysis of the situation in Europe, did the European management of railways in making the transition from steam to diesel and electric traction appraise the work of the firemen and as the result of that take any action?

A It is perfectly clear that the employment of a fireman as such has been eliminated in most cases.

Q Now, has there been any action in Europe by railway management in recent months that deals with their opinion as to the crew assignment on diesels?

A In June, 1956, at a meeting of the International Association of Railways a resolution was introduced, debated and passed reading:

"The handling of a diesel locomotive may be entrusted to a single person."

R.A.Emerson

Q Now, Mr. Emerson, I wish to deal with the safety statistics on the European railways but before I do so, you mentioned yesterday the operation of the New York Central on multiple unit operations out of Grand Central and the safety situation on that, Mr. Chairman, has already been given in evidence by Mr. Borntrager at volume 6, page 758; but Mr. Emerson also mentioned the Canadian National Railway operation out of Montreal to St. Eustace through the tunnel at Mount Royal. Have you developed from the Canadian National Railways what their safety situation is on that operation, Mr. Emerson?

A I have.

Q What is it?

A The multiple unit cars on that operation were placed in service in 1952 and since that time there has been no accident due to employee negligence.

Q Well now, the European situation --

BY HON. MR. McLAURIN:

Q Employee negligence or employee failure?

A Yes; they would be synonymous.

Q But there is quite a difference. There might be failure without negligence?

A This is not negligence, sir, perhaps in the legal term. It is negligence in the sense --

Q Canadian Pacific Railway does not call it negligence unless they are negligent and get

1. The first part of the report
describes the general situation
of the country and the
state of the economy.
It also mentions the
state of the army and
the navy.
The second part of the report
describes the state of the
economy and the
state of the army and
the navy.
The third part of the report
describes the state of the
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The fourth part of the report
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The fifth part of the report
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The sixth part of the report
describes the state of the
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the navy.

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in a wreck or kill passengers?

A From the standpoint of our own analysis we might call it employee negligence but not from the standpoint of law. There might be a distinction there. The term negligence would not include a mishap if one occurred at a level crossing.

Q But suppose a man had a heart attack. Let us assume that I have a heart attack through no fault of my own and cannot control my operation. It might be failure but it is not negligence.

A I see your distinction. Based on the information given me the proper term, if you will, "employee failure" could be applied equally.

BY MR. SINCLAIR:

Q Failure or fault, would that cover it?

A Yes.

BY THE CHAIRMAN:

Q In other words the accidents were those involving a third person?

A I do not know that there were any accidents; so far as I know there has been none. Third parties could conceivably enter the picture; conceivably there could be a failure of mechanical equipment.

Q But your statement did involve a qualification. I assumed it meant that level crossing accidents, for instance, were due to somebody driving into the cars or something of that kind?

D.A.Emerson

A Yes, that would be so.

Q Well, perhaps you could clear that up for us, Mr. Emerson, so we will know exactly what is meant.

A Surely.

MR. SINCLAIR: Yes.

BY MR. SINCLAIR:

Q This statement which I would like to file as Exhibit 181 is entitled, "comparison of accident statistics -- Canadian Pacific Railway and certain European railways, year 1955".

EXHIBIT No.181: Comparison of
accident statistics --
Canadian Pacific Railway
and certain European
railways, year 1955.

BY MR. SINCLAIR:

Q You will recall that what was an accident in the statistics, Mr.Chairman, was dealt with when Mr. Lewis dealt with Exhibit 45, I think, from which this material in Exhibit 181 is drawn, and I think an accident, as I recall it, was defined by the international statistics as one involving 20 gold francs.

A I think it was a thousand gold francs.

Q It was about \$250 or \$300, is that right?
Perhaps we had better check with Exhibit 45.

A Yes, on page 19 in the English version, under the heading "accidents" there is a note applicable to columns 3 and 4, footnote

B, which says:

"Serious material damage. Serious material damage means damage to the rolling stock or track or other railway equipment either together or separately to more than one thousand gold francs."

On the Canadian Pacific in dealing with accident statistics, Mr.Emerson, do you recollect the dividing line in regard to money? What is it, Mr.Emerson on the Canadian Pacific?

A Our own division is based on damage in excess of \$375. The figures in Exhibit 181, however, I should point out, were taken from the same source, the International Railway statistics, Exhibit 45.

Q And an appropriate adjustment was made in the reporting of the statistics?

A I have not inquired into that.

BY THE CHAIRMAN:

Q That is not the definition of "accidents" though. In the first place, in the first part of Exhibit 181, it shows the source as Exhibit 45, table 4.2, columns 16 and 18, but the Canadian Pacific is not included in that exhibit at all.

A Yes.

MR. SINCLAIR: Oh, yes sir.

THE CHAIRMAN: It is included in that exhibit?

MR. SINCLAIR: Oh yes.

THE CHAIRMAN: It is international?

MR. SINCLAIR: Yes, it is international and the other exhibit we put in, Exhibit 174, concerning the Canadian Pacific also came from the same document.

THE CHAIRMAN: Very good. Then, you were talking about the definition of accidents.

MR. SINCLAIR: Yes sir.

BY MR. SINCLAIR:

Q Yes?

A Page 19 of Exhibit 45.

THE CHAIRMAN: Yes, but "accidents" are not limited to paragraph B alone. That only has relation to collisions between rolling stock occurring in stations.

MR. SINCLAIR: I think you may perhaps have to do it by inference, Mr. Chairman, I notice here in Exhibit 45 on page 19 it says:

"Each accident must only be shown once. For instance, if a collision causes a derailment, the collision only is counted. Likewise, if vehicles foul a neighbouring line in a case of derailment and cause a collision, the derailment only is counted as being the initial cause of the whole of the accident. Column 6 deals with collisions between rolling stock and a fixed obstacle. In this column are shown collisions between rolling stock and a fixed obstacle occurring in open track or in

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stations (between the entering and the leaving points) when resulting in one of the consequences enunciated in the explanatory note to column 4 under a, b, c and d. Then, you exclude suicides."

I think that "accident" is shown by these various things to be a fortuitous event and furthermore they are comparable in the sense, I would say, that you must assume an organization like this organization in getting these statistics is tying them in so that you have a comparable basis.

THE CHAIRMAN: Oh, it is comparable, yes.

MR. SINCLAIR: And I would think from the various definitions we would only say an accident was a fortuitous event which is in the normal designation of "accidents" involving, in regard to collisions, over one thousand gold francs and involving other people. It looks like everything excluding suicides.

THE CHAIRMAN: Well, an accident is comparable as between all these railways, according to Exhibit 181?

MR. SINCLAIR: That is right, sir.

BY MR. SINCLAIR:

Q Now, looking at that, Mr.Emerson, what do you wish to draw to the attention of the Commission?

A This exhibit contains two statements, one showing

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persons killed as a result of train accidents and the other showing persons injured as a result of train accidents in the year 1955. Under the heading "persons killed" you can see that on the Canadian Pacific there were no passengers and five employees killed and the ratio is shown as 0.060 persons per million train kilometres. The comparison with the other railways, the European railways visited, is readily available. Generally they are somewhat better than we are.

Now, as to persons injured, the Canadian Pacific figure is passengers and employees together 0.274 persons per million train kilometres. The European railway figures vary from a low on the French railways of 0.091 to a high on the British railways of 0.970. The figures for the Netherland railways and the Swiss federal railways are quite close to the Canadian Pacific figures.

Q Now, Mr.Chairman, I wish to turn to certain types of Canadian Pacific operations with this witness. Has the Canadian Pacific any electric operations, Mr. Emerson? They have, have they not?

A Yes. The Canadian Pacific has an electric operation in southwestern Ontario between Port Dover, Galt and Waterloo.

Q What is the road miles, first main track, on that operation?

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A Sixty-nine miles. '

Q What kind of an operation is it?

BY THE CHAIRMAN:

Q Is that the Grand River Railway?

A Yes sir, and the Lake Erie and Northern.

BY MR. SINCLAIR:

Q What kind of operation is it?

A A freight and yard operation. There is no passenger train being operated now.

MR. SINCLAIR: I wish to file as Exhibit 182 a photograph of Canadian Pacific electric lines locomotives used in freight service. The photograph is of electric locomotive 224 which is shown as G.R.R. That is the Grand River Railway locomotive No.224.

EXHIBIT NO.182: Canadian Pacific Electric Locomotive -- Grand River Railway Locomotive -- No.224.

BY MR. SINCLAIR:

Q Could you comment on that exhibit, No.182, Mr. Emerson, if any comment is needed?

A As the exhibit shows this is a 500 horsepower locomotive. The weight on drivers is 120,900 pounds. It takes power from an overhead wire through a trolley.

Q I have a photograph, Mr.Chairman, of another type of locomotive from the Lake Erie and Northern. It is an electric locomotive and I would ask to have the photograph filed as Exhibit 183.

E.A.Emerson

EXHIBIT NO.183: Lake Erie and Northern
electric locomotive
No.333.

BY MR. SINCLAIR:

Q These are locomotives now in operation on electric lines, so-called, of the Canadian Pacific?

A Yes, they are; locomotive units.

Q Pardon?

A Locomotive units.

Q Yes, electric locomotives. What are the crew assignments on this type of motive power in freight service, Mr. Emerson?

A In this operation there are nine five-men crews working at the present time. These crews consist of an engineman, sometimes called a motor man, a trolley man, a conductor and two trainmen. Now, the function of the trolley man is to handle the trolley on the top of the locomotive. When the direction of the locomotive is reversed in switching or in road movements, the trolley must be unhooked from the overhead wire by a rope carried around and put up in the other direction. In other words, the trolley is always trailing. It is very much like a street car trolley, as you can see.

BY THE CHAIRMAN:

Q Is that the sole function of the trolley man?

A Yes sir, on those crews.

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BY MR. SINCLAIR:

Q You said there were nine crews?

A Yes sir.

Q And are there any crew assignments with less than those numbers you have given?

A Yes, there are two crews with four men. In each case the assignment is an engineman, a trolley man-brakeman that is, a trolley man hyphen brakeman -- a conductor and a rear brakeman or trainman.

BY HON. MR. McLAURIN:

Q Have you a collective agreement with the Brotherhood?

A Yes sir, with the Brotherhood of Railroad Trainmen who cover all the men.

BY MR. SINCLAIR:

Q They cover all the employees?

A Yes, in train operation.

Q Whether they are enginemen or trolley men or brakemen?

A That is right.

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Q Now, looking at Exhibits 181 and 182, would you please tell the Commission -- there must be controls at either end?

A You mean Exhibits 181 and 182 or 182 and 183?

Q I mean 182 and 183, thank you, Mr. Emerson.

A Yes, there are control stations at either end of the body. Looking at Exhibit 183 it appears -- looking at the photograph -- on the left-hand corner of the locomotive under the number 333. Similarly, there is a corresponding station on the opposite corner.

BY THE CHAIRMAN:

Q At the other end?

A Yes, sir.

BY MR. SINCLAIR:

Q Where does the trolley man ride on the locomotive, taking either one of the exhibits, 182 or 183, say the locomotive was proceeding towards the right of the picture with a freight train, where would the trolley man ride?

A The trolley man rides on the rear of the locomotive handling or holding on to the rope.

Q And the rope is attached to the trolley?

A Yes.

BY THE CHAIRMAN:

Q Is he always there?

A Yes, sir.

BY MR. SINCLAIR:

Q Whereabouts?

A Sometimes he may ride inside or he may ride on

the outside.

BY THE CHAIRMAN:

Q What is the distance, the length of these railways?

A Sixty-nine miles.

Q In total?

A Yes, 69 road miles.

Q Roughly half in each?

A As between the Lake Erie and Northern and the Grand River?

Q Yes?

A I have not the figures in my mind, but I will secure them for you.

Q Perhaps that is unimportant. What I meant was, if a freight train is going from one end of the Grand River Railway to the other would the trolley man ride throughout the journey on the rear end of the locomotive?

A Yes, sir, he rides all the time facing to the rear. The Lake Erie and Northern Railway is 52 miles in length and the Grand River Railway is 19.5. That does not add up to 69 because in one instance there is a spur two miles long included.

Q That does not matter; I just wanted to know about the trip.

BY MR. SINCLAIR:

Q With a five-man crew what would be the arrangement on the locomotive? I take it the balance of the crew would be back, or where would they be?

A The engineman is driving the locomotive, the head end trainman rides generally in the forward cab and the conductor and rear end trainman on the rear of the train, except however on multiple unit operation. Then, the trolley man looks after the trolley pole on one unit on the head end and the trainman looks after the trolley pole on the other unit, so they are both in the back of their respective units.

Q What about four-man crews, what would be the place of the crew?

A With a four-man crew the engineman would be driving the engine, the trolleyman-brakeman sitting at the rear --

Q That is hyphen brakeman?

A Yes, trolley man-brakeman, sitting at the rear of the cab holding the trolley and the conductor and brakeman at the rear end of the train.

Q Now, the obvious question is, with a four-man crew is there any multiple operation?

A Well, with a four-man crew there could not be multiple operation.

Q Unless they used the conductor or rear trainman?

A Or rear trainman as a trolley man.

BY THE CHAIRMAN:

Q In switching has the trolley man any function other than handling the trolley?

A No, he just handles the trolley, sir, from one end to the other.

Q He does not pass signals?

A My understanding is not, no, sir.

BY MR. SINCLAIR:

Q There is one other railway operation to which I wish you to direct your attention, Mr. Emerson, for the assistance of the Commission, and that is the Aroostook Valley Railway. The Aroostook Valley Railway operates where?

A The Aroostook Valley Railway, which is a subsidiary of the Canadian Pacific, operates in the State of Maine between Presque Isle and Caribou.

BY THE CHAIRMAN:

Q What is the length of that?

A It is 32 miles and is a freight operation only with local switching, and is operated by three 44 ton locomotives, diesels, which have been in service since 1945 at which time they replaced electric locomotives.

BY MR. SINCLAIR:

Q Now, prior to 1945 was the Aroostook Valley an electric operation entirely?

A Yes.

Q When the transition was made what was the crew assignment that they had with the electric operation on the Aroostook Valley?

A The crew assignment was an engineman, trolley man, conductor and two trainmen.

Q When the transition was made to diesel, was there or was there not any change in that crew assignment?

A Yes, a change and the changed crew assignment

is now engineman, conductor and two trainmen.

Q This railway, the Aroostook Valley, is in the famous potato-growing area of Maine?

A Yes.

Q Does it switch the potato houses?

A Yes, that is the big industry in that part of the country.

BY THE CHAIRMAN:

Q I suppose these diesels are less than 90,000 pounds weight on drivers?

A Yes, but this is a road operation.

BY MR. SINCLAIR:

Q Are the employees of this railway organized?

A Yes, they are represented by the Brotherhood of Railway Trainmen.

Q All of the employees?

A Yes.

Q That is, whether they are enginemen or trainmen, they are all represented by the Brotherhood of Railway Trainmen?

A All of the train service employees.

Q In that respect, they are the same as the electric lines you spoke about earlier?

A Yes.

Q Now, Mr. Chairman, I wish to direct this witness' attention to another matter and that is dealing with the training of firemen on the Canadian Pacific at the present time. Now, first, Mr. Emerson, we have filed here as Exhibit 27 the Uniform Code of Operating Rules; it is in evidence?

A Yes.

Q Now, under the operations of Canadian Pacific, what is the responsibility under the Operating Rules of crew members of trains?

A All members of train crews are jointly responsible for the observance of the provisions of the Uniform Code of Operating Rules in so far as they apply to them.

Q We have also had in evidence here, Mr. Emerson, as Exhibit 106, which was filed by Mr. Fraine, a comparison of the duties in freight service of firemen and head trainmen, that is both steam and diesel?

A Yes, I have a copy.

Q You have considered that exhibit, have you?

A I have.

Q Please tell the Commission whether you have any comment on it, if you have anything to add to it or what your views are as to the various duties as delineated in there? I should also say to you that Mr. Fraine, in giving this evidence concerning this exhibit, said that in setting out these duties he did so in regard to their primary, secondary and tertiary -- whatever the degree would be?

A Yes.

Q What is your comment?

A I am in accord with the statement as it is set out in this exhibit. The duties of firemen on diesel locomotives were taken from a bulletin

which I instructed be issued in October, 1956.

Q We have filed here, Mr. Emerson, as Exhibit No. 7, and compiled by Mr. Gossage, a list of the duties of firemen, and at pages 6 and 10 of that exhibit we are shown for the Eastern, Prairies and Pacific regions, certain bulletins entitled, "Instructions to Enginemen and Helpers Operating Diesel Units"?

A Yes, I have copies.

HON. MR. MARTINEAU: What Exhibit is that?

MR. SINCLAIR: Exhibit No. 7, sir, pages 6 and 10.

BY MR. SINCLAIR:

Q You have copies of that before you?

A I have.

Q Is this the bulletin you have referred to that was issued on your instructions?

A It is.

Q And it is also the one you referred to in dealing with the duties of firemen on diesels in Exhibit 106?

A Yes.

Q Now, Mr. Emerson, when diesels were first introduced in road service on the Canadian Pacific -- by the way, when was that?

A That was in 1949.

Q When diesels were first introduced in road service on the Canadian Pacific what were the duties of the firemen?

A The duties of the firemen on road diesels were to comply with the Operating Rules. There were, of course, no system instructions at that time and we had not had experience with the locomotives, and I here speak, of course, of the operation of the locomotive as a mechanical device. When the diesels were first introduced, they were put in in limited areas and the mechanical officers in those areas, acting on the knowledge they had acquired from visits to the United States, set out temporary instructions for the duties of firemen.

Q We have had filed here by Mr. Woodland, I think as Exhibit 129, a document dated June 1, 1949, consisting of three sheets.

A Yes.

Q What is your comment on this? Is this the document you had reference to in regard to the statement you have just made that on a local basis the mechanical officers issued temporary instructions; is that correct?

A That is correct.

Q This is one of the ones you had in mind?

A Yes.

Q To what class of power did this apply?

A This applied to Alco, car body type units, for road freight service.

Q It applied only to car body type?

A That is correct.

Q How do you determine that?

A From the designation which appears in the upper right-hand corner.

HON. MR. McLAURIN: What exhibit is this?

MR. SINCLAIR: Exhibit 129.

THE WITNESS: DFA-15A and DFB-15A are both car body types, the one being an A unit and the other a B unit.

BY MR. SINCLAIR:

Q Just to see how your eyes are, I took a guess at what was struck out on that

exhibit. Would you like to see what you can do with it, in the second line?

A I would surmise it was "and road switching locomotives."

Q You think what is deleted is "road switching locomotives," do you?

A I think so.

Q What was the next step, Mr. Emerson?

A Later that same year with the experience gained these instructions were revised and re-issued on December 12, 1949.

Q That is Exhibit 129A?

A Yes.

Q And the next step, Mr. Emerson, in regard to these instructions or the dates of the forms on diesel power; what was the next step in sequence?

A The next step was the issuance of a further form known as MP-604.

Q That is Exhibit 130; have you a copy of that?

A Yes.

Q That is MP-604, and this exhibit shows that it was issued on April 6, 1951, and supersedes the temporary form of December 12, 1949?

A Yes.

Q What comments have you to make on that, if any?

A Comparing this with the earlier forms,

Exhibit 129 and Exhibit 129A, it will be noted that all that remains is the provision for recording of certain gauge readings, which were also shown on sheet 3 of the previous exhibits; the first two sheets of those exhibits setting out certain duties of the firemen having been discontinued.

Q Were those first two sheets used subsequent to that date, Mr. Emerson?

A I understand that they were sometimes handed to firemen for their information and guidance.

Q In dealing with these three exhibits that you have you mentioned that temporary forms were issued on a local basis. Was Exhibit 130 issued on a local basis or was it on a system basis?

A No, Exhibit 130 was never used in Western Canada.

Q Would the same apply to Exhibits 129 and 129A?

A That is correct.

Q Including the first two sheets?

A Yes.

BY HON. MR. MARTINEAU:

Q You said they were never used in Western Canada?

A In Western Canada.

MR. SINCLAIR: I think when

Mr. Woodland was on the stand he also gave evidence and explained --

HON. MR. MARTINEAU: I think Mr. O'Brien testified as well.

MR. SINCLAIR: That is right. My recollection is that Mr. O'Brien explained why. I take it that when it first came out it might have been used in local areas.

THE CHAIRMAN: What was the next step after Exhibit 130?

BY MR. SINCLAIR:

Q What was the next step after Exhibit 130? What form was issued or what action was taken by the company?

A Well, the next step really was the development of uniform system instructions.

Q Was there any reason why they took one action in Western Canada in regard to this and different action in Eastern Canada; was there a reason for that?

A Yes. There was a divergence in viewpoint at that stage of our mechanical officers. Those in Western Canada, based on their assessment of the situation and the information which they had secured from areas in which the form was in use through the United States, and having in mind the improvements which had been effected in the

construction of diesel units, reached the conclusion that the form, Exhibit 130, was not required and that in fact it would be a hindrance rather than an aid in maintenance procedures.

Q The next step; was there another form after that which is known as MP-74; that is the next form that we had introduced here as Exhibit 131?

A Yes.

Q To follow the sequence?

A Yes.

Q It is shown on the foot of Exhibit 131 that it was revised December 1955. Reference is made to the office of the Chief of Motive Power and Rolling Stock. Is that a system position?

A That is a system position and this is a system form.

Q It was revised in December 1955. What is the background of Exhibit 131 and why was it revised? What took place with regard to this?

A Prior to the revision indicated on this form the engineman booked matters of defect in items which he wished to call to the attention of the shop staff in respect of the locomotive which he was operating in a sheet in a bound book which was carried in the locomotive foreman's office. With

the greatly increased use of run-through power, in other words locomotives which ran through maintenance terminals, which followed the introduction of diesels, this form, this procedure was changed and instead of the ^{engineman} ~~fireman~~ booking in in the bound book, it was made loose leaf and carried on the locomotive.

Q This form, Exhibit 131, is the engine-man's report?

A That is the engineman's report.

Q And Exhibit 130, as is indicated at the foot, is the fireman's report?

A That is right.

Q In that period when, as you say, there was this divergence of view between the east and the west and, as you said further I think, the development of more modifications and changes in the diesel locomotives, and also the experience in the east of the mechanical officers taking certain views, how did the company handle this matter as it acquired additional units?

A I am sorry, I did not quite follow your question.

Q We have the situation where the firemen were given certain temporary forms as indicated by Exhibits 129 and 129A?

A Yes.

Q Then, as you have said, Exhibit 130 came

out, which was form MP-604?

A Yes.

Q That was a temporary form and instructions and that MP-604 was not used in the west. Then you said there was some divergence of opinion with regard to the first system form, that was on diesels, Exhibit 131. That is the first system form. What took place? How did you get the transition from the discord, should we say -- as my friend suggests -- to harmony? How did you arrive at something that applied to the whole country and which also took place in regard to your own instructions, in regard to bulletins that you issued, or that you instructed to be issued in October 1956, being Exhibit 7?

A Yes.

Q How did all that happen?

A With the increasing use of diesels on a system basis, system instructions on the duties of firemen on diesels were developed. After consultation with the officers I instructed that the bulletin of October 1956, Exhibit 7, sheets 6 and 10, be issued.

Q Was there any change in the type of diesel that came along at that time?

A Yes. There were mechanical improvements and changes in the diesel locomotive units

themselves which entered the picture.

Q What about types?

A Yes. There was an increasing use of road switching units that entered the picture very much.

Q Why did they introduce a new factor, Mr. Emerson?

A Well, on the road switching units it is dangerous to operate, to open the side panels, the engineroom doors, when the unit is in motion over the road because of the possibility of the force of the wind striking the door and carrying it away or slamming it partly shut on a man who may have his head inside the engine compartment.

Q We have heard some evidence about couplers and walkways.

A Yes. It is also hazardous to pass between road switching units in road service when in motion over the road if they are not equipped with walkways.

Q What is the practice in regard to road switchers being equipped with walkways, Mr. Emerson?

A The practice is to equip with walkways those road switchers which carry steam generators and which may therefore be used in passenger service.

Q And with train lines equipped for passenger service?

A If they have a steam generator they have a steam heat line.

- Q I mean a train line, a road switcher equipped with a train line that might not have a steam generator and could be used?
- A Oh yes, equipped with a steam heat line, yes.
- Q What was the experience of the company with regard to these road switcher units as to mechanical operation?
- A With the introduction of the road switcher units of course it was no longer feasible to carry out the periodic gauge readings as shown on Exhibit 130 when the unit was in motion. However, our experience following that was that this omission of these gauge readings did not in any way affect the serviceability of the locomotive adversely because they performed equally well with the car body type units.
- Q In regard to patrolling, has there been any experience with the car body units, which are susceptible of patrol through the engineroom, and the road switcher units which are not susceptible to patrol in the same sense, has there been any experience as to the effect of patrol on diesel locomotive failures or defects?
- A There is no correlation between the fact that it is possible to patrol the car body type units and it is not possible to patrol the road switcher type units. In other words, the omission of the patrol has not

adversely affected the serviceability and the operation of the units in any way.

Q In issuing your instructions as shown in Exhibit 7 at pages 6 and 10, these various factors you have given in evidence just recently, were they or were they not what you said resulted from your consultations? I think you used the general phrase that following consultations this was issued?

A Yes.

Q These various factors you have dealt with arose out of --

A Were all taken into consideration.

Q Now, have you taken any very recent action, Mr. Emerson, in regard to the activities of firemen on diesels?

A I have.

Q Yes?

A Last week I instructed that a bulletin be issued to engine crews on diesel units across the system.

MR. SINCLAIR: I should like to file as Exhibit 184 a bulletin entitled, "Engine Crews on Diesel Units."

EXHIBIT NO. 184 --Bulletin, Engine
Crews on Diesel
Units.

BY MR. SINCLAIR:

Q What was the background of the issuance of this bulletin, Mr. Emerson? What caused it to be issued?

A Well, from my observations, from reports filed during these proceedings and from reading the transcript it came to my attention that firemen were going back to patrol road switcher type units, passing between units of this type in motion which are not equipped with walk-ways, opening the side panel doors on road switcher type units which is objectionable not only from the standpoint of hazard but also because it may allow large volumes of air carrying dust and dirt to enter the engine compartment, and for the same reason the opening unnecessarily of the end doors on car body type units is objectionable.

Q That is from the cab to the engineroom?

A Yes.

Q Or from the end of the first unit to the "B" unit?

A Yes, the end doors.

Q As a result you say you did what?

A I instructed that this bulletin be issued.

Q And has it been issued?

A It has been issued. I have confirmation from all points except some on the eastern region at the moment, but if it has not been issued it is a matter of a day or so.

BY MR. LEWIS:

Q Coul we have the earliest date? I saw a bulletin dated May 2. Would that be about

the earliest date?

A That would be about the earliest date, Mr. Lewis. I do not think there would be any May 1st.

BY MR. SINCLAIR:

Q Well, about the earliest date?

A Yes. This action was taken last week.

Q Now, you spoke of these reviews that culminated in your instructions to issue the bulletin of October, 1956, delineating the duties of firemen?

A Yes.

Q At the same time were you reviewing the situation of enginemen on diesel motive power and did you take any action in regard to enginemen?

A Yes. The instructions dealing with the duties of enginemen on taking charge of or leaving a locomotive were reviewed and issued as shown in Exhibit 114.

Q That is the duties of enginemen in taking over various types of power and when leaving various types of power?

A Yes.

Q Exhibit 114. Now, that has to do with specific instructions. What about the mechanical examinations that are given to firemen for qualification to become enginemen? Has anything been done in regard to that?

THE CHAIRMAN: Is this a new subject?

MR. SINCLAIR: Yes.

THE CHAIRMAN: Just a minute.

BY THE CHAIRMAN:

Q Mr Emerson, I should like to take advantage of the fact that you are here. Look at Exhibit 130.

A Yes.

Q I should like to understand the history a little bit more. It may not be important. The information required or called for by this form, Exhibit 130, that would be obtained en route?

A That was supposed to be obtained en route, yes sir.

Q What was the importance of it, the value of it?

A There was at an earlier time a theory, and this was adopted from the practice which was in effect on the American roads, that if there was available the data shown here in the circles at the bottom of the page when the locomotive was operating under load that it would indicate conditions which might be of assistance to the maintenance staffs.

Q You mean it was in the nature of research, was it?

A That might have been. I think it was an early practice which was discontinued. For example, you see lubricating oil pressure, the different readings. There was a theory, of course, that if you saw the lubricating oil pressure

decreasing on a particular unit or at a particular time it might indicate some trouble with the oil or with the engine itself, the bearings becoming sloppy and loose and passing too much oil and that type of thing.

Q Now you really rely on the alarms en route?

A Plus the fact, sir, that the maintenance techniques in the shops have greatly advanced. We have much better equipment. We are equipped in many cases to put the engine under load right in the shop if this type of information is required, not in this specific form but for the purpose of seeing how it behaves.

Q Then, Exhibit 8, page 6 --

MR. SINCLAIR: Exhibit 7.

THE CHAIRMAN: I am sorry, Exhibit 7.

BY THE CHAIRMAN:

Q Exhibit 7, page 6, this was a circular of October, 1956?

(2) A Yes, sir.

Q And there has been some evidence given about this before but I should like to hear from you on it. It reads:

"There appears to be some misunderstanding in the minds of enginemen and helpers as to the duties and responsibilities of helpers on diesel units. In order that there will be no cause for such misunderstanding,

the duties of helpers on diesel units are as follows."

Then you have 1,2 and 3, and the third relates to passenger service only?

A Yes, sir.

Q That is the steam generator. Then you say:

"It must be clearly understood that the engineman, not the helper, is responsible for the diesel unit or units in his care."

That harks back to Exhibit 131, does it? It is the engineman who has to inspect and report?

A Yes, Form M.P.-74; yes, that ties in.

Q Then, Exhibit 7 goes on:

"A helper is ~~not~~ required to patrol diesel units, except as directed by the engineman or as may be required for the operation of steam generators."

Under what circumstances would the helper be required by the engineman to patrol a diesel unit?

A Well, there might be circumstances under which, for example, an alarm had indicated and the engineman might say to the helper, "Will you go back and reset this device."

Q Anything else?

A I don't know that I can be completely exclusive. I would not say that might necessarily be all. I would like to think about that. If

he had, for example, overheated cooling water he might send the helper back to examine the shutters on a trailing unit, generally arising as the result of an alarm.

Q And as we have heard from other witnesses, if he did not have a helper he would have to stop and do it himself?

A In some cases, not in all cases.

Q What are the exceptions?

A Well, in many cases the train could continue.

Q You mean he would just isolate the particular unit?

A Yes, sir. It could continue to a convenient stopping place.

Q But apart from that?

A Apart from that the only instance in which he would necessarily stop would be where the train was unable to continue with one unit inoperative.

Q And in that case he would have to go back himself?

A He would stop and give it attention himself.

Q See what he could do?

A Yes, sir.

Q Then, going back to Exhibit 7, page 6, the last sentence reads:

"In the same way, when a unit has been checked by shop staffs, the helper is not required to perform mechanical checks, or to see that

the unit is properly equipped and supplied with fuel, lubricating oil, water or sand."

There would be cases where a unit has not been checked by the shop staffs, would there not?

A Very few.

Q Run-through?

A Very few cases, primarily, sir, when the unit would go out to lay at a small outlying terminal overnight or in work train service or something like that.

Q What about run-through? Would the shop staff come in there?

A In some instances the shop staff attend a unit during run-through. In some instances they do not.

Q Well then, would Exhibit 114 come in there, which gives the duties of the engineman?

A Yes, sir. Exhibit 114 shows at page 3, for example, taking charge of a locomotive at an outside point where no shop staff is on duty or available. That was the situation I spoke of, the things that are required to be done which are the responsibility of the engineman, although I can conceive he might delegate some of them, instruct the fireman, to carry out some of them.

Q I am not speaking of that. I am speaking of the primary responsibility?

A The primary responsibility is on the engineman, sir.

Q Well, I take it from reading Exhibit 7 on page 6 that that is the purpose of that sheet, to put the responsibility on the engineman?

A I would not say to put it on him, but rather to make it clear that that is where it rests.

Q Well, I was just interested at the moment in the possible inference that can be drawn from the last sentence I read to you, "...in the same way when a unit has been checked by shop staff, a helper is not required".

Well, the inference is that if the unit has not been checked by the shop staff a helper would be required. But you say that by reason of the other exhibits to which we referred the primary responsibility is on the engineman?

A In any event, yes sir.

Q Well, do you expect the helper to do anything under that last sentence where there has been no inspection by the shop staff?

A Only if he is requested by the engineman to do so.

Q I see. All right.

MR. SINCLAIR: Sir, this clock has stopped completely, apparently, and I was wondering if you would give us a short break.

THE CHAIRMAN: Surely, we will recess for a few moments.

-- The Commission took recess.

R.A.Emerson

--- After recess

BY MR. SINCLAIR:

Q If I may, Mr.Emerson, I would just like to follow up the questions put to you by the Chairman. In steam days, or with steam operation today, where is the responsibility for ascertaining that supplies of coal, water and sand are on the locomotive?

A The responsibility for checking to see that the locomotive is supplied with fuel, water and sand rests with the engine crew.

Q And?

A With diesels and with the introduction of diesels we place that sole responsibility on the shop staff. Now that is a significant feature of Exhibit 7, sheets six and ten.

Q And Exhibit 114?

A And Exhibit 114.

Q It delineates the onus with regard to the duties on the engine?

A Yes.

Q If at a run-through point on run-through engines fuel or any other supply is required -- take for example a train that required fuel, let us say, at Smiths Falls. I do not know if they do take it there but let us assume that they did. Let us assume that they had to fuel a diesel at Smiths Falls. Who would do it?

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A It would be done by the shop staff.

Q Would that apply throughout the country?

A Yes.

BY HON. MR.MARTINEAU:

Q Who would find out if there is enough fuel?

A The arrangement is this, sir. When the locomotive is dispatched from its originating terminal it is fully fuelled, sanded and watered and those supplies are known to be adequate to carry it for two or three subdivisions depending on the service and arrangements are made for replenishing these supplies at intermediate terminals in accordance with the regular practice. For example, between Winnipeg and Moose Jaw supplies are not required. With regard to Winnipeg East, a diesel is generally fuelled at Kenora which is adequate to take it through to Fort William. Now, if through some unusual circumstance an engine arrived at a terminal which was not a regular refuelling station and was requiring fuel, the engineman of course would advise the shop staff either by message ahead of time or upon his arrival at the terminal.

Q Has the engineman got a gauge inside to tell him if there is enough fuel?

A No, the gauge I think is on the tanks in all

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instances. That is my recollection.

However, it would only be some most unusual circumstance which would cause the engine to require fuel at other than a regular point. Perhaps a better example would be water -- cooling water.

If for some reason an engine ran short of cooling water -- let us say the radiator shutters stuck and caused the engine to overheat and boiled away some of the water, then the engineman would wire ahead that ^{at Ignace} they would require additional water.

BY MR. SINCLAIR:

Q Would the shop staff come down to make sure they get it?

A Yes, in that case the engine would be taken to the shop track or some other point where water is available and the shop staff would replenish the cooling water in the engine.

Q Another example would be if an engine were short-turned, for instance, if it cycled out of one place and it was decided to short-turn a diesel locomotive, on the short turn, if it were necessary for it to have water and sand, at the same time the arrangement for short-turning was set up would they set up, if it were required, fueling facilities?

A Yes.

Q With the maintenance staff?

A With the shop staff.

THE CHAIRMAN: What do you mean by "short-turn"?

MR. SINCLAIR: An engine may be detailed to operate from Winnipeg through to Moose Jaw and because of operating reasons or any other reasons it may be turned, for instance, at Brandon and sent back to Winnipeg or some other place farther along and the operating department making this arrangement -- the point I was making is that part of the arrangement is to also consider the fuel situation, water and sand, and make the appropriate arrangements to take care of them.

THE CHAIRMAN: That is, the total distance the engine would cover would be greater than what it would have been if it had kept on going?

MR. SINCLAIR: Yes.

BY MR. SINCLAIR:

Q The next step I wanted to deal with in this training of firemen had to do with these mechanical examinations. Perhaps I had better put it this way. To qualify for an engineman, Mr. Emerson, does a fireman require to take mechanical examinations?

A Yes, he has.

Q What has been the evolution of these mechanical examinations in this transition on Canadian Pacific from steam to diesel? Has there been any or what is the situation?

A Well, yes, with the introduction of diesels it was necessary to prepare a new set of mechanical examinations dealing with the different class of power.

Q Now, we had filed as Exhibit 147, part of a book that is known as Mechanical Examinations for Locomotive Enginemen, Firemen and Helpers.

A Yes.

Q And on the second page of this first group here, I see, "First Series", "Second Series", and "Third Series". What does that mean?

A I beg your pardon?

Q What does that mean?

A Well, those are the series of examinations which

firemen take for promotion to enginemen in accordance with the schedule which is delineated in Item 2 on page 1.

MR. SINCLAIR: Just a minute.

THE CHAIRMAN: All right, I have it.

BY MR. SINCLAIR:

Q You were referring to the white sheets, and they are required to pass three examinations?

A Three series of examinations.

Q Three series of examinations and they are then qualified from the mechanical standpoint as enginemen; is that correct?

A Yes.

Q These series are given at various stages, after various times?

A Yes.

Q In which they are employed?

A That is right.

Q The purpose of these examinations is what? Have they any other purpose than qualifying these men?

A No, it is for the purpose of qualifying these men as enginemen.

Q Are mechanical examinations on the Canadian Pacific for qualifying enginemen a new thing?

A Oh, no, that has been in existence for many, many years. We had firemen's mechanical examinations for steam locomotives back to -- well, the oldest one I have seen is back in 1900's.

Q In this transition from steam to diesel, then, my question was, has there been a revision of these mechanical examinations?

A Yes, there necessarily has.

Q Who is in charge of these mechanical examinations, specifically in charge?

A This revision of the mechanical examinations was undertaken by the Chief of Motive Power and Rolling Stock.

Q Yes?

A In preparing Exhibit 147, the material for Exhibit 147, he had in mind the change from steam to diesel and included in the subject matter items for educational purposes to acquaint the firemen with some of the principles of the operation of diesel-electric locomotive units, bearing in mind, of course, that each fireman is a potential engineman at some time in the future when he stands for promotion.

Q Now, Exhibit 147, was it necessary to make any changes in it recently, Mr. Emerson?

A Yes, following the issuance of the bulletin, sheets 6 and 10 of Exhibit 7, we made an examination of other forms on the system which would run counter to it or to the duties of the engineman which were delineated in Exhibit 114, and found that there were some inconsistencies, and as a result Form MP-⁵⁰⁵~~105~~, Exhibit 147, has been withdrawn for revision. It is in the course of being undertaken at the present time.

Q Was there any other example of that?

A Yes.

Q For instance, we have here a booklet bearing Form No. CS-44, which was Exhibit 116, and that was a booklet entitled, "Instructions Pertaining to the Movements of Trains, Engines and Cars", which was dated in June, 1952?

A Yes.

Q Was there anything in the light of what you said -- you have given one example of MP-505, which is Exhibit 147. Is another example Exhibit 116?

A Yes, that form is also in the process of revision.

BY THE CHAIRMAN:

Q When you said in connection with the other that it had been withdrawn for revision you went on to say that Exhibit 116 was in the process of revision; I am just wondering whether either of those would be operative in the meantime?

A Exhibit 116 was not withdrawn because it contains numerous instructions which are applicable.

Q And which have to be followed from day to day?

A And which are continued in the revision.

Q In the meantime they have to be followed from day to day?

A Yes, sir. There are many instructions in this book that are not related to diesels.

BY HON. MR. McLAURIN:

Q A good part of Exhibit 116 relates to the train regardless of the type of power?

A Yes, sir, there are many items in it.

BY MR. SINCLAIR:

Q Mr. Emerson, the duties of the fireman as delineated in Exhibit 7, pages 6 and 10, in the light of that, and in the light of other duties that the fireman may have, what training is given to firemen?

A The training given to firemen for service on diesel locomotives is solely in respect of the steam generator, apart of course from compliance with the Uniform Code of Operating Rules, Exhibit 27.

Q Has there been any change in that recently?

A No, there has been no change; the training given now and in the past corresponds with the duties as delineated in the bulletin Exhibit 7, sheets 6 and 10.

Q Prior to the issuance of that bulletin was there any training given in contemplation of the duties set out in that bulletin?

A Well, the training -- yes, I think so. I think it would be fair to say that.

MR. SINCLAIR: The various steps taken in the training of firemen were dealt with by the witness O'Brien in Volume 26, pages 3539 and following. I do not think we need burden the Commission again with that.

BY MR. SINCLAIR:

Q Have you read that part of Mr. O'Brien's testimony?

A I have.

Q What have you to say?

A I have nothing to add.

Q Are firemen in any way required to take any mechanical instructions as firemen pertaining to their duties as firemen other than on steam generators?

A No, they are not. Of course a number of men ask for information and we are very glad to give it to them, to advance their appreciation of the operation of the diesel, what it does and why it performs as it does, as education, bearing in mind that they are, as I said before, potential ^{engine men} firemen in the future.

Q Turning now to the question of maintenance. As you have explained earlier, you are responsible on a system basis for maintenance I think you said of rolling stock and including motive power?

A Yes.

Q That is part of your jurisdiction and responsibility. What effect has the introduction of diesels had on the maintenance situation of the Canadian Pacific?

A It has resulted in widespread and basic changes in the maintenance of motive power.

Q What was your experience with diesels when you first received them, Mr. Emerson? Has there been any change in regard to reliability of performance?

A Our first experience with diesel had some heartaches in it, you might term it that. There were some difficulties which perhaps were not unanticipated in a sense because we were dealing with a new tool. They were new to us; in many instances they were

new to the manufacturer who produced them. The shop staffs were unfamiliar with them, but in the time since these matters have changed and the maintenance is on a much better basis and the functioning of the locomotives has and is improving constantly. It is vastly different now from what it was.

Q Has there been any basic difference in the maintenance problems of diesel versus steam?

A Yes. The diesel engine is a very different machine. It involves many parts which are finally constructed to fine tolerances, with delicate settings -- perhaps "delicate" is not the word -- or fine settings, whereas the steam locomotive was a relatively simple machine with most of the working parts exposed and it could be handled with relatively crude tools.

Q As a consequence of that basic difference has that affected in any way the attitude of the company in regard to what they expect of the crews?

A Yes. The company does not wish and does not ask the engine crew to maintain the diesels, to adjust them, to try to rectify troubles or anything of that sort, beyond resetting the protective devices or taking

action in accordance with the specific instructions of a mechanical officer.

BY THE CHAIRMAN:

Q You say that you do not require anything from the engine crew except the resetting of devices. How many are there of those?

A There are four; there is the low lubricating oil, the ground relay, the engine --

Q The hot engine?

A The hot engine with an alarm, and the fourth is the engine overspeed.

Q Just those four?

A Yes, sir.

Q What is involved when an alarm goes off? It is reset once, is it?

A No; in the case of the ground relay I think the instructions are to reset it not more than three times. I will have to refer to the mechanical instructions on that.

BY HON. MR. McLAURIN:

Q I think you said yesterday that in the case of the ground relay it was three times. There is no device to reset in the case of a hot engine, is there?

A No. The engine stops or idles. No, there is no resetting device on it except to restore the engine to the line when it is cooled down.

Q Open the shutters?

A Open the shutters, but then you have also to restore the engine and put it on the line or start it again.

BY THE CHAIRMAN:

Q Is the hot engine the only one of the four that is different from the other three? The other three can be reset, either once or three times or whatever limit to the number there is?

A Yes. The low lube oil pressure which stops the engine, the instructions are to reset it once.

Q There are those three cases where resetting can be done for a limited number of times, but the hot engine is different, it is a case of isolating it as soon as it occurs and giving it a chance to cool?

A It isolates itself on certain types of unit. There are differences in the different types of unit.

Q But beyond that, nothing is required of the engine crew?

A The engine overspeed device can be reset.

Q That is one of the three that can be reset. You gave us four in all.

A That is right. There is the engine overspeed, the ground relay and the low lube oil, and the hot engine.

Q The first three can be reset, either once or some other limited number of times?

A Yes.

Q And the hot engine would have to be cooled?

A Yes. There are conditions of course where it is not necessary to cool the engine per se. For example, if the shutters were found stuck the shutters could be opened and the engine would cool down in operation. You also have had evidence, for example, of the type of hot engine alarm which may arise occasionally in operations over the Field hill, coming up through the spiral tunnels. An engine can overheat but that is a condition which is familiar to the crews operating in that territory.

Q It dissipates itself?

A If it is the type of unit which shuts down, it could be restarted. They know that as soon as they are out of the tunnel the cause of the hot engine will disappear.

Q In the area of those four subject-matters that is all that is required of the engine crew?

A That is all that is required. There have been cases on the road where trouble has sometimes developed and the engineman will get on the phone and talk to a mechanical officer and act on his instructions.

Q That is just a case of calling for help?

A Yes.

Q He does not do it himself?

A He is not expected to act on his own initiative.

Q You have exhausted what the engine crew is expected to do?

A Yes, sir.

Q You had a second subdivision, and I am not sure exactly of your answer, where you made some reference to getting assistance from the mechanical staff?

A I think I said acting under the instructions of a mechanical officer. What I had in mind was the case of an engineman who has a unit die on him and needs some help to get to the terminal. Rather than wait for another engine he might get on the phone and ask the Master Mechanic, "This is what happened, can you tell me what to do?"

Q Beyond that the crew are given an operating unit and as long as it is operating, that is their responsibility. You have covered the area where it stops operating?

A Yes, I think that is correct. Of course we have not been dealing with such items, for example, as a broken air hose or a hose fault between units. The crew has a spare and they have the tools they can change that with.

Q Who does that?

A The engine crew can do that; the engineman

alone can do that.

BY MR. SINCLAIR:

Q That is between the locomotive units?

A Yes. I am going outside the diesel engine and the electrical transmission field into the air system, which can and is handled.

BY HON. MR. McLAURIN:

Q That would apply to both types of power?

A Precisely.

BY MR. SINCLAIR:

Q Have you thought of matters such as wheel slip or train overspeed devices or over-gearing or dynamic braking, dynamic brake failure in which case a light may flash. That also is part of the engine-man's responsibility, is it not?

A Yes, it is part of his responsibility to observe these warnings if they occur and to take action. He is given some training as to the action to take.

BY THE CHAIRMAN:

Q That is operating action as to how he controls his unit?

A Yes, sir.

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BY MR. SINCLAIR:

Q For instance, looking at Exhibit 165, Mr. Emerson -- I don't know if you have that before you -- the four that you dealt with in your discussion with the Chairman are set out on the first page and on the second page under "Additional Signals on all Types and Manufacture" you have wheel slip, dynamic brake overload, locomotive overspeed, power off, and then specialty protective devices on some units?

A Yes, and also there are certain -- some of these circuits are fused. They are given spare fuses and the locomotives carry spare light bulbs. If a bulb burns out or a fuse blows the engineman has instructions as to what to do about that.

Q And the handling of braking equipment over the road is set out in a circular -- I forget the name of it -- the instructions pertaining to air brakes and such things as reservoirs?

A Oh yes, draining the main reservoirs every four hours, draining the condensation off them; yes, that is covered.

Q Would that be the engineman's responsibility?

A That is the engineman's responsibility.

Q By the way, just when we are on that matter, yesterday Mr. Hooley was giving evidence in connection with G.M. units and he said they had these air box drains?

A Yes.

Q I want to try to recollect his testimony accurately. I think he said some --

THE CHAIRMAN: Sludge.

BY MR. SINCLAIR:

Q Some sludge got into these things and some engine crews did it and some did not and that it did not apply to all units, and he said the fireman usually did it. I want to know from you who has the responsibility for these air box drains where they are in existence on these diesel units. Is there anything in the records or regulations covering that?

A Oh yes, that is covered in the maintenance schedule for General Motors diesel freight units, trip inspection, one item of which reads, "Open air box drain valves."

Q Who has to do that?

A That is the shop staff, the mechanical staff.

Q It is a mechanical staff requirement?

A Yes.

BY THE CHAIRMAN:

Q I thought from what you read that it was something that had to be done en route?

A No, this is the trip inspection at the completion of a trip when the engine is in the shop.

BY MR. SINCLAIR:

Q It specifies that, does it?

A Yes.

Q Now, I was dealing with steam and you said that in steam the working parts were exposed and relatively simple and not made to fine tolerances and I asked --

THE CHAIRMAN: That is in the case of steam.

MR. SINCLAIR: Yes.

BY MR. SINCLAIR:

Q I asked whether that had any effect on what the company expected of the crew. You explained what the diesel was and you said what the company expected in regard to diesels. Now, in steam what was the situation?

A Well, in steam the engineman, perhaps assisted by the fireman, could on occasions take action in the event of trouble with the locomotive en route.

Q You mean by making repairs?

A Yes. For example, they could take down the side rods in some cases, which would enable it to continue to a terminal.

Q Before I move on to another matter, Mr. Emerson, I think maybe the Commission knows this but these air box drains do not have anything to do with the reservoirs which are a part of the brake system. The air box drain has to do with the lubricating system, and I think I said yesterday that there was a bypass valve on these units.

THE CHAIRMAN: You are now speaking of the

diesel?

MR. SINCLAIR: Yes.

BY MR. SINCLAIR:

Q Mr. Hooley spoke of these drains and I said there was a bypass valve so that even if they did get full they automatically cleared themselves up to the time they got to the shop. I wanted you to confirm that if you would?

A That is correct, Mr. Sinclair.

Q It has nothing to do with the brakes at all?

A No, the air box is simply on the air intake of the air to the cylinders of the diesel engine and the drain valve, this collector has an overflow so in the event it is not drained it will automatically prevent it from going above an improper level.

Q Now, Mr. Emerson, in making one of your trips across the country in connection with your duties I requested you to make certain observations and to set out for me what you saw.

THE CHAIRMAN: Exhibit 185.

EXHIBIT NO. 185 -- Record of trip observations by R. A. Emerson.

MR. SINCLAIR: There are seven reports here and I think I can handle them very quickly, Mr. Chairman.

BY MR. SINCLAIR:

Q At the bottom of each of these reports, Mr. Emerson, you have set out in each case where

you rode and the distance that you rode?

A That is right.

Q The balance of the time you were on the train. Now, I think the first one speaks for itself. It was a 4-unit consist on a freight train between Revelstoke and Field. That is coming east?

A Over the Mountain subdivision.

Q The second one is an extra east.

MR. LEWIS: Excuse me a moment. The first one refers to the fireman being in the engine-room. Would that be en route?

THE WITNESS: That is right. That was en route.

MR. LEWIS: While the engine was in motion?

THE WITNESS: Yes.

THE CHAIRMAN: What was the question?

MR. LEWIS: On page 1 under "Details of Duties Performed by Fireman En Route" it says that the fireman was in the engineroom four times, I think it is.

THE WITNESS: Four times.

MR. LEWIS: Between Revelstoke and Glacier and twice between Stoney Creek and Golden.

THE WITNESS: Yes.

BY THE CHAIRMAN:

Q Is that in the engineroom of the leading unit?

A I did not follow him to see how far he went

back, sir.

Q Then it says that the head end trainman inspected the train. Is that a running inspection?

A That is a running inspection, sir.

MR. SINCLAIR: Down below it says, "See above".

BY MR. SINCLAIR:

Q Then we come to No. 2. Here again I do not think there is any necessity to go into it. It speaks for itself. It is an extra east from Field to Calgary. The third one is a road switcher, Trainmaster type, from Calgary to Medicine Hat. Under "Alarms and Defects En Route" you have recorded:

"Engine not loading properly. Ammeter out of order. Train continued to Medicine Hat at reduced speed."

Did the crew take any action to enable the train to continue, Mr. Emerson?

A No. The road foreman of engines was on the train and endeavoured to rectify the trouble but was unable to do so. Actually it was due to the fuel rack being out of adjustment.

BY THE CHAIRMAN:

Q Fuel what?

A Fuel rack, sir, which simply means that the throttle of the engine would not open fully to give it a full supply of fuel, and that had no connection particularly with the

second item, ammeter out of order. They were not related.

BY MR. SINCLAIR:

Q And this was a single unit?

A This was a single unit.

Q A single Trainmaster, and in spite of this it continued right through to the destination terminal?

A Yes.

BY THE CHAIRMAN:

Q I suppose the shop staff looked after it there?

A Yes, sir. Actually it had been in Alyth together with some representatives of the manufacturers who had been out making a routine trip to that point to observe the operation of these units and they set up some adjustment but evidently got it set up wrong.

BY MR. SINCLAIR:

Q Now, No. 4, is there anything in that one in particular, Mr. Emerson?

A No. The fireman was a little sleepy over part of the trip.

Q I notice his name happens to be the same as mine. It was not I, was it?

A No. I would like to clear the record on that point, Mr. Sinclair.

MR. LEWIS: Similar hereditary characteristics.

MR. SINCLAIR: I would doubt that very much but it could well be.

BY MR. SINCLAIR:

Q Then, No. 5 reports your observations pretty well, Mr. Emerson. Is that right?

A Yes.

Q And that also applies to No. 6 and No. 7?

A Yes.

THE CHAIRMAN: We will adjourn now.

-- The Commission adjourned at 12.30 p.m. until
2 p.m.

Tuesday,
May 7, 1957

AFTERNOON SESSION

-- The Commission resumed at 2.00 p.m.

R.A.EMERSON, Recalled

BY MR. SINCLAIR:

Q Mr.Emerson, just previous to the noon adjournment you had told the Commission about the diesel engine, the fine tolerances, and the adjustments, and so on, as compared to the steam engine where you have a relatively simple machine with most of its working parts exposed. You said that the company did not expect engine crews to make adjustments or repairs on diesels but, within their competence, they did expect them to make and they did make repairs to steam engines. Does that summarize it pretty well?

A Yes. I think I said there were instances in connection with steam engines where there were things they could do but that we did not expect them to make adjustments on diesel engines, and furthermore did not want them to do so.

Q Has it been your experience that they have tried to make adjustments even though you do not want them to do so?

A There have been instances where they tried and with undesirable results. Tinkering with a diesel engine by a person who is not

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qualified and does not have the tools required, leads to difficulties.

Q Throughout these proceedings up to this date the company through various witnesses has filed a number of trip reports. I think we have had ten witnesses deal with reports they have made. As exhibit No.186 I would like to file a statement entitled, "Analysis of Road Freight Trip Reports filed as exhibits by company officers."

EXHIBIT NO.186: Analysis of road freight trip reports filed as exhibits by company officers.

BY MR. SINCLAIR:

Q Have you this analysis statement before you, Mr.Emerson?

A I have.

Q Will you mark it as Exhibit No.186, please? Now, was this prepared by you or under your direction?

A Under my direction, yes.

Q And what is your comment on it to the Commission, please?

A As the heading across the exhibit shows out of a total of 779 hours and 24 minutes observations over a distance of almost 19,000 locomotive miles there were eight trips on which alarms occurred with the result that the percentage of trips completed without alarms

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

which are satisfied by the functions $u_i(x, y, z)$ and $v_i(x, y, z)$ in the domain D of the space E_3 bounded by the surface S .

It is shown that the system of equations is solvable in the domain D if and only if the functions $f_i(x, y, z)$ and $g_i(x, y, z)$ satisfy the conditions of compatibility of the system of equations in the domain D and on the surface S .

The second part of the paper is devoted to the study of the properties of the solutions of the system of equations in the domain D and on the surface S . It is shown that the solutions of the system of equations are unique in the domain D and on the surface S if the functions $f_i(x, y, z)$ and $g_i(x, y, z)$ satisfy the conditions of compatibility of the system of equations in the domain D and on the surface S .

R.A.Emerson

was over 95.

Q Ninety-five per cent?

A Yes.

Q And?

A It is further significant that the average unit miles per alarm for the carbody type unit were 3,246 and for the road switcher type, 4,130. Now, that to me indicates that the road switcher type in which the engine is enclosed in a hood and cannot be walked around in the same way by any person en route is no more susceptible -- in fact it is clearly indicated that it is less susceptible -- to troubles arising on the road.

Q And the total number of **observation** trips is 168?

A Yes.

Q And of the total locomotive miles which is approximately 19,000 as is shown by the summary of alarms recorded, you have also recorded in there the only engine failure that did occur?

A Yes.

Q This, I think, will be found on the second sheet and it is a case where the ampledyne exciter on the governor wore out or caused some difficulty and that was the only engine failure?

A The only case where the engine shut down and could not be restarted.

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Q And evidence was given on that, Mr.Emerson, to the effect that it could not have been repaired by the crew and in point of fact the evidence indicated that the diesel maintenance man from the company when he came out found that he could not do it because it had to be done in the shop. It was a shop job?

A Yes.

Q That was the evidence, you would agree with that?

A Yes.

Q Now, what general comment would you make as a result of this analysis of these trip reports from a mechanical standpoint? What do you think it indicates outside of what you told us about concerning the relationship of carbody and road switcher types? What other general matter do you think it signifies?

A I think it indicates a high degree of operating reliability under service conditions of the diesel engine.

Q On this statement you have set out from these trip reports in synopsis way what occurred, and also you have included in there certain additional information as to what would have happened to the movement of the train with the loss of power, have you not?

A Yes.

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Q Would you just state before running through these, if you lose the power of a unit in a diesel consist, what are the two alternatives?

A Cases in which the power of one unit is lost will fall into two categories. First, those instances in which the train can continue with the power of the remaining unit or units to a convenient stopping place where, if the shut down is due to the action of one of these protective devices, the engineman can reset it and proceed.

Now, the second category includes cases in which the loss of power of one unit will cause the train to stall.

Q What effect would the continued employment of a fireman have on that category?

A In those cases which would involve operation with tonnage trains on controlling grades, in general the train will stall before a fireman could go back to reset the protective device.

Q What about the first category that you mentioned?

A Well, in the first category there are possible instances involving carbody units or units with steam generators or steam train lines which are equipped with walk ways in which a fireman might go back in motion to reset a protective device that is inside

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the cab of a ^{trailing} ~~controlling~~ unit but they are very rare -- relatively few; I should put it that way -- and the absence of a fireman will have very slight effect on operations.

Q Well, if the engineman did have to stop to reset one of these devices himself, Mr. Emerson, from your knowledge and your analysis of these problems, what would the delay be? Would it be long or short? What would it be like?

A It would be short, generally, and furthermore it might be of no consequence because he could frequently time the stop to coincide with a stop made to clear a superior train or a stop made for a standing inspection of his train.

Q Just look at Exhibit 186, if we may, and dealing with each of the alarms that are noted here. One of Mr. Youngs' trip reports dealt with this particular hot engine alarm and his evidence was that he had been instructing the engineman before leaving the shop track and after setting up that situation he had not properly restored the contactor and had caused this alarm?

A Yes.

Q Will you look at the last sentence as I should like to direct the attention of the Commission to this. It says:

"Tonnage of train 3003."

That would be tons.

"Tonnage rating for one unit 3300."

That would be three tons less than the tonnage of the train?

A No, I make it 297 tons more than the tonnage of the train.

Q I am sorry, you are right.

"Tonnage rating for one unit 3300.

Train could have continued without difficulty to inspection point with only one unit operating."

A Yes.

Q Is that because there was a difference between the rating of some 297 tons, that is the rating of the one unit was 297 tons

higher than the actual tonnage?

A Yes; in other words this train could have been hauled by the one unit.

BY THE CHAIRMAN:

Q It did not need the second unit?

A Not to haul the tonnage, no, sir.

BY MR. SINCLAIR:

Q When you refer to the tonnage rating for a single unit, how is that tonnage rating fixed? Is it fixed with respect to the controlling grade on the move?

A Yes.

Q For the subdivision?

A For the subdivision, between two terminals.

Q That tonnage rating there of 3300 for one unit would be only at the controlling grade of that subdivision, and how long would that be?

A It would probably be on an average quite short, only a small portion of the subdivision in length.

BY THE CHAIRMAN:

Q This is not relevant to what you are speaking about now, but earlier you said something about the car body type in comparison with the road switcher where a person could not walk around the engine. On the car body type he could certainly walk along just one side.

A No, on the car body type you can walk

along both sides.

Q What did you say?

A I think my point was that on the road switcher type where the engine was enclosed you could not, in fact it is prohibited now to open the doors of the engine compartment when the unit is in motion.

Q Therefore you cannot see the engine at all?

A Yes, sir, that is correct.

Q I did not follow what you said.

BY MR. SINCLAIR:

Q The second one was also dealt with by Mr. Youngs, that is, Exhibit 28. This had to do with a low lube alarm, as is shown in the particulars and as was given in evidence by Mr. Youngs. He adjusted the by-pass regulating valve and by that adjustment overcame the trouble. Then you note here:

"This adjustment could not have been done by engine crew."

A Yes.

Q What is your comment, if anything, on that?

A This is one of the type of things that I mentioned earlier, where the engine crew could not take care of it on the road.

Q You go on further to say:

"Train continued for several miles with only one unit operating while

"repairs were being made and could have continued to terminal account tonnage 3003 and tonnage rating for one unit 3300."

The tonnage rating of the one unit was in excess of the tonnage of the train?

A Yes.

Q So even if you had lost that unit entirely and the difficulty had not been rectified, I take it that your point is it would have caused no inconvenience?

A No.

Q The next one also arises out of a report by Road Foreman of Engines Youngs. This had to do with a ground relay. In this case the tonnage of the train was 2319 and the tonnage rating for one unit was 3300, so the train tonnage was substantially below the tonnage rating for one unit?

A Yes.

Q Anything further on that? You say:

"Train could have continued without difficulty to terminal with only one unit operating."

A Yes.

Q The next one reads:

"Alarm occurred on leading road switcher unit."

This was dealt with in evidence by Mr. McClean:

"Reset button pushed by Assistant Diesel Inspector J. K. McClean. Button could have been reached by engineman. Time required to recover unit after alarm, 15 seconds. Tonnage of train 3489. Tonnage rating for one unit 3300. Train was beyond ruling grade when alarm occurred and could have continued to inspection point with only one unit operating."

A Yes. That again is a case that falls into Category 1 which I mentioned.

Q Your point is that if the device had not been reset it would not have caused inconvenience?

A No.

Q It could have been reset?

A The point in this case is that it could have been done at the stopping place.

Q In point of fact it was a road switcher with the button right behind him and he could have done it himself?

A Yes.

Q The next one reads:

"Alarm occurred on trailing car body B unit. Engineman requested fireman to determine cause of trouble. Train continued at track speed of 45 m.p.h. while only one unit was operating.

"Tonnage of train 2130. Tonnage rating for one unit 2500. Train could have continued without difficulty to terminal with only one unit operating."

HON. MR. MARTINEAU: Who was the witness?

MR. SINCLAIR: That was Mr. O'Brien; this was one dealt with by Mr. O'Brien.

HON. MR. McLAURIN: It is No. 3 you are working on?

BY MR. SINCLAIR:

Q February 16, Exhibit 107, page 9. This was an instance of a hot engine which was dealt with by Mr. O'Brien. You will recall that he gave evidence that on that occasion the switch was out of calibration and the fireman -- I think I am right about this, am I not, Mr. Emerson?

A I am following you; I am agreeing with you.

Q The fireman went back and seeing this switch out of calibration, put it on its mark and in fact turned the blowers off. You will recall that testimony, but in any event the train could have continued without difficulty to the terminal with only one unit operating?

A Yes.

Q The next one had to do with Witness George

Russell. This reads:

"Single road switcher unit.

Engineman reduced throttle to allow engine to cool off. No further trouble experienced."

That was as I recall a C.L.C. unit, that is a Fairbanks-Morse unit, and it did not automatically put the engine to idle. All the engineman did was to reduce throttle and it dissipated whatever was causing it without any action by the crew?

A Yes.

Q The next one is dealt with by Exhibit 123, again Witness Russell. This reads:

"Alarm occurred on leading road switcher unit. Fireman pressed reset button at engineman's request. Engine did not load. Fireman checked fuses and found none blown. Engine started to load on its own accord. Tonnage rating for one unit in excess of tonnage of train and could have continued to inspection point with only one unit operating."

The evidence there was that this was a road switcher, as I recall it, and there was some suggestion that the crew thought it was the fuses -- I am not sure whether it was a road switcher or car body, but in any event there was a suggestion that there

was something the matter with the fuses and they took them all out and put them back in again, but that was not the trouble. Then in some way the engine itself dissipated whatever was causing the trouble?

A It was a road switcher unit, as you say.

Q It was a road switcher?

A Yes.

Q Here again if nothing had been done it still could have continued to inspection point with only one unit operating because of the tonnage rating of the one unit, and then the engineman could have taken whatever action was necessary; that is the point?

A Yes.

Q The next one was dealt with in the report by Superintendent Crate. This reads:

"Both alarms occurred on leading road switcher unit, same trip; one at mileage 18 and the second at mileage 38. Fireman reset overspeed trip on both occasions. Train could have continued from mileage 18 to next station with only one unit operating but would probably have stalled at mileage 38."

I take it that that means that when the first engine overspeed operated the train

could have proceeded to the next stop without any inconvenience or difficulty, but on the second occasion you say it would probably have stalled at mileage 38?

A Yes. That is a case that would come into Category 2 that I spoke of earlier.

Q In this case the tonnage and the location of the controlling grade, the difference was so narrow, the margin was so small, that you say "would probably." You do not say that it would have stalled, you say it would probably have stalled. It was on the border line?

A As I recall, it was just slightly in excess of the tonnage for one unit.

BY THE CHAIRMAN:

Q What happened at mileage 38?

A The fireman reset the overspeed trip.

Q The second time?

A Yes, sir, on both occasions.

Q What you mean by this last sentence is that if there had been no fireman the train would have stopped and the engineer would have had to do that himself?

A Precisely.

BY MR. SINCLAIR:

Q The last one was also dealt with by Witness Crate. This reads:

"Alarm occurred on trailing car body B unit. Reset in

"60 seconds by Road Foreman of Engines accompanied by fireman. Train stalled one-half mile after alarm occurred due to worn brushes in Ampledyne exciter on same unit. Trouble could only be corrected at shop. Necessary to double train from mileage 33 to mileage 18."

That is the one to which you referred earlier?

A Yes.

BY THE CHAIRMAN:

Q Would you tell me again what that last sentence means?

A "Necessary to double train from mileage 33 to mileage 18." That means that when the train stalled as it did, in this instance the coupling was pulled behind roughly half the train, the air connection broken or disconnected, and the front half of the train was taken to the next siding. Then the engine returned to get the second half and likewise took it to the next siding.

BY MR. SINCLAIR:

Q Now, Mr. Emerson, in your experience and opinion and from the analyses you have made, what effect does patrolling have on alarms?

A Patrolling has no effect on the incidence

of alarms because it cannot anticipate them, with the single exception of the possible cause of a hot engine where detecting a rise in temperature it would be possible in some circumstances to see if the radiator shutters were open or the fan operating properly to cool the engine.

Q In the normal course of a freight train movement over a subdivision, in the normal course of its operation does it stop?

A Oh, yes, more or less frequently, depending on circumstances. It stops, as I mentioned, for the clearance of superior trains, for inspection of the running gear of the train, standing inspection by the train crew, and on occasion of course to pick up and set out traffic.

Q What about patrolling, for instance, in motion to see the operation of the engine under load as distinct from when it is stopped; is there anything in that?

A There is no reason for that to be done.

Q In your opinion is it necessary to patrol or listen for noises or look for fires?

A No, it is not.

Q Exhibit 163 sets out the particulars of defects as they are called in the Board of Transport Commissioners' reports of 1954 and 1955?

A Yes.

Q Now, the 1955 report of the Board of Transport Commissioners is Exhibit 50 and the 1954 report is Exhibit 136. It was filed by my friend Mr. Lewis. Now, if you look at page 61 of Exhibit 136, you will see that there is recorded there, for Canadian Pacific, 76 defects in the inspection of 413 units, Mr. Emerson?

A Yes.

MR. LEWIS: What page was that?

MR. SINCLAIR: Page 61 of Exhibit 136.

BY MR. SINCLAIR:

Q If you will look at page 77 of Exhibit 50, it will show there are 213 defects for Canadian Pacific in the **inspection** of 767 units?

A Yes.

Q Now, what comment have you to make on that increase in the percentage of defects? I have worked out the percentages, here, subject to checking, and I think maybe Mr. Lewis also gave them?

A I have **them** here, I think.

Q If they are different from those, I would take Mr. Lewis' calculation. I have 18.4 per cent for 1954, 27.5 for 1955?

MR. LEWIS: That is close enough.

THE WITNESS: I attach no significance whatever to that increase.

BY MR. SINCLAIR:

Q Why?

A Well, if you look at the details --

Q That is in Exhibit 163?

A In Exhibit 163, it is immediately apparent that many of these so-called defects are very minor and have no effect on the safe operation of the unit. There are very few instances in which the unit could not have been safely operated without any attention.

However, another feature which must be borne in mind is that these examinations of locomotive units by the inspectors of the Board are, in many instances, conducted at our shops -- in fact, in most instances, and often perhaps before the engine has been checked by our own mechanical staffs and o.k.'d for service.

Q We had evidence here that the Board's inspectors made their check, and then it was followed through and cleared up by the mechanical forces. I think that evidence was given, but that is the procedure in any event, is it?

A Yes, but what I am saying is that they would have done that normally in many instances anyway without the Board calling the attention of the maintenance forces to these so-called defects.

Another conclusion to be drawn, if you look at the front sheet of Exhibit 163, and down near the bottom of the page, taking Items 64 to 75 inclusive --

Q 64 to 75 inclusive?

A Yes. In 1955, there was a total of three "defects" booked under that heading. In 1955,

the number is 25. Those are defects related to steam generators.

Q In looking at those figures, Mr. Emerson, and an analysis made of them, what could a fireman have done to overcome those defects?

A In most instances, nothing.

Q Now, Mr. Emerson, it has been suggested that as diesel units get older they develop more defects or cause more trouble, their reliability falls. What would you say to that sort of proposition?

A I would disagree with that. In fact, I would say quite the contrary! in many instances some of our troubles have been with the new units that are just put into service, just the same as when you get a new car there are sometimes little things that show up.

Q In the light of your experience, and in the light of your responsibility, have you personally in your work gone over the maintenance facilities of the company for diesels?

A Yes, within the last two years I visited all of our major maintenance shops for diesel repairs, at least once, and examined the work being done, the premises, the equipment and tools and facilities with which they have to work, in company with our mechanical officers, and I am quite satisfied that the maintenance of our diesel motive power equipment is in good hands. I have complete confidence in the

competence of our mechanical officers. Before this Commission, Mr. Woodland, Mr. O'Brien and Mr. McLean have appeared, and I would be quite satisfied that they are a fair sampling of our officers.

Q As you have seen them and observed them over the system?

A Yes.

Q Now, Mr. Chairman, I wish to turn to another aspect with this witness and to deal with him with the situation of safety. Mr. Emerson, what is the situation as to safety as a principle on Canadian Pacific?

A Well, the principle of safety is a cardinal principle on railways generally, and the Canadian Pacific in particular.

Q Is there anything you wish to draw to the attention of the Commission as to the stating of that cardinal principle of safety that you have mentioned?

A If you will refer to Exhibit 27, which is the Uniform Code of Operating Rules, this book begins with the statement on page 2 that safety is of the first importance in connection with the discharge of duty. It repeats that principle in rule after rule. Further on, it states that obedience to the rules is essential to safety.

Q What kind of record has the Canadian Pacific in regard to safety in train operations, Mr. Emerson?

A The Canadian Pacific has an excellent record.

Q We had from Mr. Fraine Exhibit 113 which deals with the matter. Have you got one of those before you?

A Yes, I have.

Q Have you any comments you want to make in regard to that?

A I think that exhibit clearly shows that in the year 1955 the employee negligence train accident ratio of Canadian Pacific -- Canadian Pacific stood third of the ten largest railways of the United States and Canada.

Q Have you got the figures for all Class 1 railroads in the United States?

A Yes, that figure for all Class 1 roads in the United States in the year 1955 was 2.56.

Q I wonder if the Commission would mind adding that to Exhibit 113, please. It might be put at the very end, that is, for all Class 1 roads in the United States, that is all taken together, the figure is 2.56. The point just made by Mr. Emerson was to compare that with Canadian Pacific of 1.62.

BY HON. MR. McLAURIN:

Q That is in 1955?

A Yes, sir.

BY MR. SINCLAIR:

Q In the formulation of the proposal that the company made for the removal of firemen on freight and yard diesels was safety considered?

A Yes, it certainly was.

Q And what was your conclusion which you reached before the matter was put forward?

A Yes, the conclusion reached was that the implementation of the company's proposal would not in any way jeopardize the safety record which it has and is proud of.

Q In this field of employee safety, Mr. Emerson, what is the situation on the Canadian Pacific in the field of employee safety?

A As individuals, yes -- in that field the company has made important strides in recent years. To go back a little bit, during the war years there was a heavy influx of new employees. Of course, we were working necessarily under adverse conditions in many respects, so that in 1944 the company set up a safety organization for the purpose, particularly, of dealing with employee safety. This organization consists of a safety bureau in Montreal --

Q This organization, has it the prime responsibility of safety or what is the situation?

A No, it does not carry a particular or prime responsibility for safety.

Q Who has that?

A The prime responsibility for training, conduct and supervising of employees rests with the immediate supervisor, but the purpose of the safety bureau was to reinforce the

activities of the supervisors and strengthen them.

Q You said it consisted of what, a safety bureau, and then I interrupted you?

A A safety bureau in Montreal and regional safety supervisors, district safety supervisors and safety agents in some of our larger shops.

Q What is the function, you say, just to reinforce the local supervision? What is the function of it? Would you explain that, please, what do they do?

A Well, employees' safety is largely a matter of education. It is a question of training, educating people to recognize the hazards which are inherent in their work, as indeed they are inherent in every day life and to minimize those hazards or eliminate them if possible and be safety conscious.

Q How do they go about doing those things?

A Well, the safety organization first of all gets in touch with other industries and railways to compare or build up a record and compare our record with others. They set up competitions, as it were, between different parts of the system. They arrange for safety meetings on the job and in classes. They publish a periodical entitled "On Guard" which is devoted to safety matters and circulated amongst all employees. They acquire and distribute films dealing with safety -- that is motion picture films -- and that type of thing.

Q Is there any special equipment on the railway dealing with safety like safety cars?

A Yes, we have four, I think it is, four safety and rules instruction cars which operate over the system.

Q And are classes held in them?

A Classes are held in them.

Q For the employees?

A For the employees.

Q Close to their terminals and near their homes?

A Yes.

BY THE CHAIRMAN:

Q All classes of employees, or operating employees?

A Primarily operating employees, sir, but all employees are welcome to attend and participate in these meetings.

Q It is a matter of invitation, is it?

A Well, it is not an engraved invitation, sir.
It is open house, as it were.

BY MR. SINCLAIR:

Q What about in the shops? Are there safety meetings held in the shops?

A Yes, there are safety meetings held in the shops likewise and safety instruction.

Q How have you found the reaction of the large group of Canadian Pacific employees to this safety instruction, Mr. Emerson?

A I am glad to say that the employees by and large have supported the safety movement and have co-operated in it which, of course, is essential to its success.

BY THE CHAIRMAN:

Q Is this something that is unique on the Canadian Pacific or is it found elsewhere?

A No, I would not say it was unique with us, sir. It exists to a greater or lesser degree on probably most railways. It is certainly not unique, no.

BY MR. SINCLAIR:

Q For instance, we have had filed here as Exhibit 49 the Code of Safety Rules. Was that evolved and worked out by the safety department in co-operation with the operating, mechanical, shop and all these types of forces?

A Yes, it was.

Q And I think that is dated 1949. Is that

right?

A January 1, 1949.

Q Is there any particular rule in that that you would think would reflect your statement that safety was cardinal on the Canadian Pacific?

A On page 4 the first general rule reads:

"Employees must exercise the utmost caution to prevent injuries to themselves and others."

BY THE CHAIRMAN:

Q I take it that booklet is unique on the C.P.R.?

A Oh, this is our own booklet. Whether other railways have something corresponding to this or not I am not in a position to say at the moment, but this is our booklet developed by us for our purposes.

BY MR. SINCLAIR:

Q Now, you said that the employees had co-operated in this safety matter in recent years in the work of the supervisors of the safety organization and you have prepared a statement which will be Exhibit 187 entitled "Canadian Pacific Railway, Statement of Employee Fatality and Injury Ratios Per Million Man Hours."

EXHIBIT NO. 187 -- Statement of
employee fatality
and injury ratios
per million man
hours.

BY MR. SINCLAIR:

Q Looking at Exhibit No. 187, Mr. Emerson, what

is your comment, please?

A This shows the situation in 1945 when the safety organization was set up, 1945 being the first full year for which records were available, and 1956 which is last year. If you look at the fatality ratio you will see it has been reduced from .26 to .17 which is by approximately one-third. Similarly the ranking injury ratio has been reduced by approximately two-thirds and the total casualty ratio by more than one-half.

BY THE CHAIRMAN:

Q What is this "ranking injuries"?

A That is shown in footnote No. 1. A ranking injury is one which causes over three days absence from work.

BY MR. SINCLAIR:

Q And "casualty" is defined as including all injuries which cause absence from work over one day?

A Yes.

Q Is it possible to compare your record in this regard with other railways like the United States railways?

A No. Comparable statistics are not available for that purpose.

Q The figures are maintained on a different basis. Is that what you mean?

A That is correct, yes.

Q And it is not possible to make them compare?

A No, they cannot be related.

Q Now, you have developed and I wish to file as Exhibit No. 188 a statement entitled "Comparison Fatalities Per 1,000 Employees, Canadian Pacific With Other Canadian Industries."

EXHIBIT NO. 188 -- Comparison fatalities per 1,000 employees, Canadian Pacific with other Canadian industries, five years 1951-1955.

BY MR. SINCLAIR:

Q You have that before you. Will you please mark it as Exhibit No. 188?

A Yes.

Q Comment on that, please, Mr. Emerson?

A Well, as the last line of the exhibit shows the fatality ratio on this basis of Canadian Pacific has been quite substantially reduced from 1951 to 1955 and Canadian Pacific throughout those years has been in the lowest group or the group having the lowest incidence of fatalities of the industries shown.

Q The source of the data is shown as being the Dominion Bureau of Statistics and the Labour Gazette. As to certain groupings, air transportation, mining, construction and so on there are two different sources for the data. Have they been checked as to comparability?

A Yes, I am informed that the relation of the

source data is quite proper and the conclusions drawn should therefore be quite reliable.

Q You mean you have been advised by D.B.S.?

A Yes.

Q I turn now to another aspect of safety, the realm of public safety as distinct from the employee situation. What is the situation as to the company's activities in public safety?

A The company has been active in the public safety field in carrying out talks, education generally, particularly directed to persons who might have a tendency to trespass on the railway, school children and others, as well as the highway crossing situation. As a matter of fact, talks have reached, have been given to about a quarter of a million children in this respect.

Q Has the company received any special award for its activities in regard to public safety, Mr. Emerson?

A Yes, the company has received the National Safety Council public safety activities award in the years 1953, 1954 and 1955. In addition, I have just heard, just been informed that the National Safety Council has awarded the company an award of merit for exceptional service in the promotion of safety during 1956. This relates to the publication, "On Guard", which I spoke of earlier.

Q That is in the employee safety field?

A Yes.

BY THE CHAIRMAN:

Q What is the National Safety Council?

A The National Safety Council is an organization with headquarters in Chicago, Illinois, which exists for the purpose of interchanging ideas, thoughts on safety and generally promoting safety amongst industry and others.

Q On the continent?

A Yes, sir.

BY MR. SINCLAIR:

Q Looking back at Exhibit 188 -- and this may be because I am overly sensitive about highway transportation -- why did you not cover that in the exhibit?

A Well, highway transportation of course is not available as such. I should point out that in each case, water transportation and air transportation, it is not transportation per se. It is the transportation industry primarily as a manufacturing group.

Q In Exhibit 188 the designation "transportation equipment", for instance, would include the motor car industry, the aircraft building industry and "air transportation" would include those working in their shops?

A Yes.

Q And their flying personnel and so on?

A That is correct. This is employees, not

patrons.

Q So that in so far as highway transportation and the building of their equipment is concerned it would be under "transportation equipment" but with regard to their own employees and fatalities on the highways you say that is not available?

A Oh no, that is not available except by reading the paper every day.

Q Now, earlier in these proceedings, Mr. Emerson, my friend, Mr. Lewis, suggested that in so far as the Canadian Pacific was concerned -- maybe it was railways generally but I think the inference was the Canadian Pacific -- in the matter of safety the cost factor was what was the motivation in the railway industry rather than, as I take it he had in mind, the humanitarian aspect or the realistic value of human life and suffering, that cost was paramount rather than safety as such.

Aside from what you have been speaking of, what would your comment be on that type of suggestion?

A I would have to disagree with that.

Q He went on from that to say that had been indicated by an analysis of certain orders issued by the Board of Transport Commissioners?

A I would say that analysis would be invalid because it overlooks the far more numerous

cases in which the company has adopted safety devices or safety measures of its own accord or by suggestion without an order of the board.

Q Have there been cases where the brotherhoods or the dominion joint legislative committee of all the railway brotherhoods have advanced suggestions which the board has in whole or in part found to be not worthy in the sense of the requirement of an order?

A Yes, there have. Two recent cases on applications by the dominion joint legislative committee, in 1951 for an order respecting the length of track sections and the number of men to be employed thereon was dismissed by the board.

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Q Were you personally involved in that case?

A Yes. And then, in 1952, an application by the Dominion Joint Legislative Committee for an order respecting the width of spacing of tracks was again considered by the board and rejected.

Q And again in that case I think you were an adviser with myself also?

A Yes.

BY THE CHAIRMAN:

Q The spacing of tracks on the Canadian Pacific Railway?

A Yes. The situation is that this matter is now covered by ^{general} ~~joint~~ order of the board. I think the number is 345. My recollection is that this application was for an increase -- widened spacing.

BY MR. SINCLAIR:

Q And the Board made an investigation in regard to that?

A Yes, and rejected the application.

Q Now, you mentioned the fact that any analysis such as Mr. Lewis suggested overlooked the numerous things that you said -- if I recall your words -- that the company instituted itself in matters of that kind. Have you any specifics that come within that grouping that you could give to the Commission?

A Yes. I think I mentioned that these were instances in which the company originated

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or took action by itself and sometimes on the suggestion of other parties. Of course, all of those suggestions have to be considered carefully in respect to what they entail and also in respect of the motivation behind them.

Now, it is impossible over the years -- especially a period of years going back as far as ^{the} 1900's -- to go back and search our records and produce a complete list of all changes in practice or devices adopted which contribute to safety. That would be an unending job. But, as examples, I can cite a few. First of all, as to road property, track and so forth. In 1931 the company adopted Mackie rail.

Q What does that mean?

A Prior to that time the Canadian Pacific in common with other North American railways had an increasing problem in respect of the occurrence of certain types of rail defects leading to failures. It was known as the internal transverse ^{fissure} ~~fisher~~.

Q That was a dangerous condition?

A Yes, it was. Primarily the rail

I might say here that this is sometimes termed colloquially "rail cancer". It is a growth defect which originates in minute separations in the head of a rail as rolled and then

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develops under traffic.

Now, the cure for that which is the Mackie rail was a change in the process of manufacture and the rail, after being rolled, is put through a controlled cooling process, and that has virtually eliminated internal transverse ~~fishers~~ ^{pressure}. Incidentally, the company was the first railway in North America to lay any such rail.

BY THE CHAIRMAN:

Q Just while I think of it, haven't you also got some kind of a car that goes over the rails to still protect that sort of thing?

A That was the very next item I was going to mention, sir, the Sperry car.

Q Then that cancer has not been eliminated?

A Primarily because, sir, all of the rail that was rolled prior to 1931, has not been eliminated. It is a continuing thing. The Sperry car, of course, is helpful in picking up other defects as well.

BY MR. SINCLAIR:

Q Other than internal transverse ~~fishers~~ ^{pressure}?

A Yes.

Q And so the Sperry car, you say, operates over the railway and detects rail defects?

A Yes, we operate it annually.

Q Do you rent it?

A Yes, it is on a rental basis from the Sperry Corporation which is an American corporation.

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BY THE CHAIRMAN:

Q It goes over the entire system once each year?

A No, we have a carefully set up and considered schedule. We do not test Mackie rail. We test other subdivisions in accordance with the past experience of the incidence of defects and the traffic over them. Some of them will be tested once, some subdivisions not at all -- and sometimes they are tested twice. It depends on our experience.

BY HON. MR. McLAURIN:

Q Mackie was a Canadian -- a Nova Scotian -- was he not?

A Yes, Mr. I. C. Mackie of the Dominion Steel Corporation.

BY MR. SINCLAIR:

Q Have you something else to mention under road property?

A The company has carried out an extensive program over the years of replacing timber bridges with steel bridges. I think the safety implications of that are obvious.

Q Yes. Another one?

A Yes. Fairly recently we have developed and employed quite extensively a switch point lock.

Q Just explain that, if you would.

I think that originated as a result of a situation not very far from here and it may be recalled.

A Yes, we had a mishap here --

Q "Here" being near Ottawa?

A -- about 1950, I think, at Westboro.

Train No.8, as I recall it, coming in one morning struck a coal truck at a crossing, carried some of the debris down the track where it contacted a switch stand, knocking the stand down, opening the switch and resulting in the engine turning into the siding and being derailed. It was quite a serious mishap.

We gave that careful consideration and we adopted and later developed a device of our own which we called a switch point lock for application in specific circumstances where this type of thing can occur. In short it is a completely separate securing device to hold the switch point closed in its proper position irrespective of the switch stand.

Q As a matter of interest, Mr.Emerson, you will recall that the law department were able to collect all the costs of that accident from the coal company, and on that note perhaps we could have a five minute recess.

A I give them full credit for that.

-- The Commission took recess.

R. A. EMERSON, recalled.

EXAMINED BY MR. SINCLAIR:

- Q You were mentioning some of the safety factors that the company had developed on their own, the last ones which they had developed and themselves applied in respect to road property. Have you a couple more examples?
- A Yes. One quite recent one is the introduction of speed signs spaced in accordance with the speed restrictions in effect. That is something the advantage of which will be I think obvious and apparent to enginemen.
- Q Those are the little yellow signs with numbers on them where there is restriction of speed in moving over the track?
- A Yes. Another one that would also be in the same category is the use of search-light signals which replaced semaphore signals.
- Q So much for the examples in the realm of the road; what about equipment?
- A On equipment I might mention vestibule cabs on ~~steam~~ steel locomotives, windshield wipers and defrosters.
- Q On both steam and diesel?
- A Yes; the diesels have always been equipped with them. Stainless steel water-glass mountings, improvements in stay-bolts,

radial friction blocks between the engine and tender, steel wheels on passenger equipment, that is solid steel wheels, and cast steel wheels on freight equipment; the application of yellow grab irons to cabooses and similar pieces of equipment.

Q And yard diesel engines?

A Yard diesels. Steel running-boards on the decks of cars.

Q Mesh?

A Steel open mesh. Also power hand brakes for freight equipment, and steel cabooses and plows.

BY THE CHAIRMAN:

Q What is the searchlight signal?

A The searchlight signal is the type of signal which you will see most commonly used travelling over the road. It appears as a black disk with a strong light in the centre and is illustrated in Exhibit 27, page 132, 501A. That gives you a direct comparison. The picture on the left shows a semaphore signal, that is Figure 1, and Figure 3 is the searchlight signal.

Q That is road equipment; what about the general aspect?

A Well, in the general aspect I think I might mention first aid instruction

classes which are carried out for the benefit of the employees; the institution of periodic medical examinations for employees in train service and dispatchers; improved lighting in terminals.

Q I wish you to turn to another aspect dealing with safety in connection with crew assignments. What in general have you to say concerning that aspect of safety in respect to crew assignments? For instance, what has been the crew assignment on passenger trains in steam days?

A The crew assignment on passenger service is and has been an engineman and fireman on the locomotive.

Q Mr. Emerson, there still are hand-fired steam engines in passenger service?

A There are.

Q When hand-firing was the order in connection with steam power, did that raise any consideration of safety in connection with passenger trains?

A No, it did not in spite of the fact the fireman might spend a considerable part of his time travelling over the road down on the deck.

MR. SINCLAIR: From the statistics of the company Mr. Emerson has extracted certain information for the year 1925, which I should like to have marked as Exhibit 189.

EXHIBIT No. 189 -- Average coal consumption, passenger and freight services, 1925.

BY MR. SINCLAIR:

Q This statement shows the actual coal consumed in freight service in 1925 and the average coal consumed in passenger service in 1925. Why was the year 1925 selected, Mr. Emerson?

A Because that was before the advent of stoker-fired locomotives.

Q Would you please comment on this?

A Well, this is taken from the company records for that year. We had the total coal consumed in freight service, the locomotive miles, and consequently could determine the average number of pounds of coal per locomotive mile.

Q Would that include any light running, for instance caboose hops where it would be just an engine and a caboose, or the transfer of power and matters of that kind?

A Yes, those would be in.

Q That would include way freights as well as through trains and freight trains?

A That is right.

Q Where they would be running many times with light trains?

A Yes.

Q As well as with tonnage trains?

A Yes.

Q That is all included?

A Yes.

Q It shows an average of 9.4 tons for a 125-mile subdivision. Winnipeg to Kenora is what, 125 miles?

A 125.7 miles.

Q In 1925 what would be the time in which a hand-fired freight train would go over that subdivision?

A In 1925, I suppose if they had a good run, 125 miles, eight hours or maybe a little better.

Q The next is passenger service, and here again it would include branch lines, main lines, light trains and heavy trains?

A Yes.

Q Would it?

A Yes; this includes passenger service of all sorts.

Q It shows an average of 5.4 tons?

A Yes.

Q For that year?

A Yes.

Q Take the same subdivision, the Kenora subdivision, 125.7 miles?

A That is the Keewatin subdivision.

Q On the Keewatin subdivision in 1925, what would be the passenger time for a

train over that subdivision?

A I have not checked it, but I would think it would be about 3 hours and 15 minutes for passenger trains.

Q For the 125 miles?

A Yes.

Q Well now, when we left the steam hand-fired and came into the stoker-fired what was the situation, Mr. Emerson?

A In passenger service?

Q Yes.

A Well, you still had two men on the locomotive, a fireman and engineman. The fireman of course still spent some time on the deck attending to his fire and his boiler.

Q We have evidence here on that matter and we will deal with it at a later time, but in the light of this fact, in both steam hand-fired and stoker-fired, dealing with passenger service; what effect had that on the crew assignment of two men, that is an engineman and fireman with the fireman on the deck engaged in his firing duties. What was the safety record passenger-wise of Canadian Pacific trains through the years?

A The safety record has been good.

Q Has there been any passenger service conducted by the Canadian Pacific with

less than two men in the cab?

A Yes. Since about 1930 or perhaps a little prior to that the company has operated gas-electric cars with one man on the head end, the engineman alone.

Q We have had evidence here that these gas-electric cars in recent years have developed into what is known as the Budd cars, which are also a one-man operation?

A Yes. The Budd car is a big advance technically over its predecessor, but it is operated the same way, by one man. The Budd cars of course are and can be operated in multiple units and are regularly operated with three units as a train, or sometimes more.

Q What statistical information have you as to the safety record of this one-man operation?

A We have statistical information available only since 1948.

MR. SINCLAIR: Mr. Chairman, you will recall that I said that Mr. Emerson would deal with this situation when this matter arose earlier. I should like to file now as Exhibit 190 a comparative statement of passenger train accidents due to employee negligence. Steam and diesel locomotives and R.D.C. and gas-electric cars, period January 1, 1949, to February 23, 1957.

EXHIBIT 190 -- Comparative statement
passenger train
accidents, different
types of motive power.

BY MR. SINCLAIR:

Q Now, just comment on this Exhibit 190 if you would, please, Mr. Emerson?

A I think the significance of this exhibit can be grasped by simply looking at the last line which shows that over the whole period the ratio of passenger train accidents per million train miles, steam and diesel, is 0.47, and in the next heading for R.D.C. and gas-electric is the same figure. It shows clearly that the operation of these trains with one man on the head end -- in other words, the engineman alone has not had any adverse effect on safety results.

Q Now, earlier this morning I did deal with you with Mr. Borntrager's evidence in regard to the safety situation on the New York Central and also you dealt with the safety situation where there was one man operation. I also dealt with, with you, the Canadian National operation of the MU equipment through the Mount Royal tunnel to St. Eustace?

A Yes.

Q There was one thing we were going to follow through with for the Chairman, but we have not got that information yet?

A I am sorry, I have not that available as of now.

BY THE CHAIRMAN:

Q Exhibit 190, would you tell me again what

R.D.C. means?

A Rail diesel car. It is another synonym for what has been referred to as the Budd car.

MR. SINCLAIR: Self-propelled cars is the term we have used here.

BY HON. MR. McLAURIN:

Q Are the gas-electric included in this?

A Yes, they are included.

Q What is the Budd, a hydraulic diesel?

A That is a car with two underslung engines, one adjacent to each truck. They are diesel engines coupled to the nearest axle of that truck with a hydraulic transmission. In other words, out of four axles on the car, two are driven.

BY THE CHAIRMAN:

Q But they are not electrically driven?

A No, they are driven by diesels through a hydraulic transmission. The gas-electric car was electrically driven. It was a gasoline engine driving a generator, not unlike the diesel-electric locomotive in principle.

BY HON. MR. McLAURIN:

Q Two wheels of each truck are driven?

A And the other two wheels are trailing.

BY MR. SINCLAIR:

Q You still have some gas-electrics operating?

A Yes, we do.

Q And they are included in these figures?

A Yes.

Q Accidents, here, means what?

A Accidents here means an occurrence which results in damage to equipment of \$375 or more.

Q Due to employee negligence? How would that compare with what you explained earlier this morning? What does "negligence" mean to you?

A This means an occurrence which resulted from the failure of an employee to comply with the *unfamiliar* *Code of Operating* Rules or -- either errors of omission or commission.

HON. MR. McLAURIN: Negligence means negligence, does it not?

MR. SINCLAIR: This time, yes.

BY MR. SINCLAIR:

Q Now, Mr. Emerson, it has been suggested that the primary duty -- it has been suggested by some in these proceedings that the primary duty of the fireman was to maintain a lookout forward. What is your comment on that suggestion?

A Well, I disagree with that. That is not the fireman's duty by tradition, primarily, as indicated by our experience in steam locomotives.

Q You mentioned Exhibit 106 which put the primary duty, and you said you agreed with that. What was the primary duty, then?

A The primary duty of the fireman was to produce power.

Q What is your comment, now, on the transition?

A In the transition, with the change from hand-fired to stoker-fired engines burning coal and oil-fired engines, the work of the fireman has

been decreasing. The production of power has been made easier.

Q And with the diesel?

A With the diesel, the production of power has been made automatic, so consequently the fireman's primary duty has disappeared.

Q In your view, even though his primary function has disappeared, what is your view as to whether he is required for a secondary function of lookout?

A For the secondary function of lookout, he simply duplicates in road service the work of other members of the crew.

Q And in yard service?

A In yard service he is not required.

Q Deadman control is a topic I would like you to deal with, Mr. Emerson, just to put it in focus here. What is the present situation with deadman controls on diesel units on the Canadian Pacific?

A The present situation is that deadman controls are in place and in service on units in passenger service.

Q What about freight?

A On freight, the deadman controls are mostly in place, but not in service. Now, this year we are equipping the few remaining units, I think there are 38, which are used in road freight service which are not presently equipped with deadman controls. When that has

been done, it is our intention to render those in use in freight service.

Q Deadman controls on Canadian Pacific will be applied and in use?

A That is right.

Q You think that will be when?

A This year.

Q Now, that is on all freight?

A On freight service.

BY HON. MR. McLAURIN:

Q You got some from the factory that have not got these controls in and you have to put them in, is that it?

A There are a total of 38 units.

Q If you get a unit with deadman control and you are going to use it in freight service, you do not connect it; it just does not function, is that it?

A There is a valve that is turned, and I think in some instances they have taken the pedal off. If it is a unit that is not at all used in passenger service, they take the pedal off.

Q If a unit with deadman control is used in freight trips, does it have to be operative?

A No.

Q It can be disconnected temporarily?

A Yes.

Q If it were a unit ordinarily used in passenger service, the deadman control could be disconnected?

A The change is made at the shop by the staff ^{that} because the valve/cuts the deadman control in and out is sealed, has a seal on it to prevent, of course, the engineman in passenger service from rendering the control inoperative unless he breaks the seal.

Q So that would mean unless the shop had fixed it up for freight, if a passenger unit were used in freight the deadman control unit would have to be operative?

A Yes, or break the seal and render it inoperative.

BY MR. SINCLAIR:

Q You say that will be done this year and have certain units been equipped already?

A Have they already been done?

Q Yes, a number of them?

A Yes.

Q You said there are only 38 left?

A Yes, only 38 left out of our inventory of road diesels.

Q Why are you taking that step, Mr. Emerson?

A Well, there are two aspects to it, I suppose. One is from the standpoint of safety. It is an extra precautionary measure. I do not think it is necessary in the sense of being essential. After all, we have no instances in freight road operations where it is required, so far as I can see, essential, to make that change, but it will bring about a uniformity as between freight and passenger.

Q What about yard operations? Then, you will

have deadman controls operative on all diesels engines in road service, but are you going to instal them on steam? Is there any suggestion of that?

A No, no suggestion of that.

Q Well, then, in the yards what is your situation about deadman control on yard diesels?

A In yard diesels, yard diesels are generally not equipped, and I do not believe it is necessary to equip them or use them in yard service, because in yard service the movements are generally off the main track, made relatively at slow speeds, and working in close conjunction with the ground crew.

Q Is there any technical reason, in the light of the type of work done by the engineman that you could not supply deadman control in yard diesels?

A No, it is quite possible, quite feasible.

BY THE CHAIRMAN:

Q They do have them in Europe?

A Yes.

BY MR. SINCLAIR:

Q Have you seen them work there?

A Yes.

Q No difficulty?

A No, they present no particular problem.

Q ~~Either~~ mechanically or in operation?

A No, no particular problem.

BY HON. MR. McLAURIN:

Q Is it just a kind of a gadget or a pedal or what?

A They are positioned differently according to the system in use in the different countries. The British yard locomotive that was shown in Exhibit 175 has a foot pedal. There, the engineman sits on a seat with his back to the window and his controls are in front of him on a sort of table that runs part way across the cab. He has a foot pedal down here and he can turn and look to the right or left as the case may be.

BY MR. SINCLAIR:

Q You mean he can swing his **seat**?

A He is just sitting there with his back to the window and he turns one way or the other.

BY HON. MR. McLAURIN:

Q What does he do when he turns right around backwards?

BY MR. SINCLAIR:

Q You mean they sit sideways, sit sideways to the direction of the movement?

A He can sit either way and by putting his left foot or his right foot on the control, he can operate it.

BY HON. MR. McLAURIN:

Q He can get a backward look?

A Yes, he can see in either direction. The German Railways use a different type of

throttle control. It is a sort of wheel and they have a hand grip on the wheel. It consists of a wheel that is separated into two halves and as long as the two halves are squeezed together the deadman control is nullified.

BY THE CHAIRMAN:

Q Looking at Exhibit 175, the photograph of the yard engine?

A Yes.

Q Who is the man in the window?

A That is the engineman.

Q It is operated from the right-hand side?

A That, I would call the left-hand side, here.

Q That is the left-hand side?

A Yes, with the engine forward.

Q The windows are in the rear?

A The windows are in the rear.

Q So, if he wants to back up, what?

A Well, if he wants to back up he can do one of two things. He can simply turn his head to the right and back up or if he wants to swing around in his seat, he can do so and put his left foot on the deadman control.

Q Then, his seat goes a full 180 degrees?

A I think, rather, it is my recollection it is rather like a little folding seat that falls down out of the wall of the cab, no arms on it, you understand, and he turns either this way or this way.

BY MR. SINCLAIR:

Q You say the German one is a squeeze device on the throttle?

A Yes.

BY THE CHAIRMAN:

Q Is there any reason why they have deadman controls on the European railways on yard engines?

A Some do and some do not.

Q But is there any reason why they do or do not?

A It is just a matter of local practice, so far as I could see, sir.

BY MR. SINCLAIR:

Q Now, in the matter of dual controls, that is another appliance in use, and from your observations you made reference to the fact that engines were equipped with dual controls. What about that, Mr. Emerson? You have seen those in operation?

A I have.

Q In Europe?

A I have.

Q And as a matter of fact, on the Canadian Pacific, have you seen a dual control engine on test?

A Yes, I have. We had a German diesel on test which had dual controls.

Q There is no difficulty applying them to diesel engines?

A No, there is no particular problem. They can be applied. They involve costs, of course.

Q By the way, just so that we can get the picture here -- possibly I should have asked you this -- what would it cost to apply dead-man control to a diesel?

A About \$1,000, I think, is the figure I have in mind, about \$1,000.

Q About \$1,000 for dead-man control, and dual control stations, which we have been talking about, what would that cost?

A That would vary according to the type of unit, to the type of brake equipment in the unit. It would range from about, at present day prices, \$3,800 to \$9,500 per unit.

BY HON. MR. McLAURIN:

Q Done at the factory?

A It is ordinarily done at the factory. It could be done after the unit is delivered.

Q Alterations are always more expensive?

A Yes.

BY MR. SINCLAIR:

Q I think the question that Mr. Justice McLaurin put to you had to do with whether the figures you gave were the factory cost or for alterations.

A I see. I am sorry I missed that. I think these figures are alteration afterwards but I am not certain as to that. I would like to check it.

Q We will check that. You would agree with Mr. Justice McLaurin that alterations are more

expensive than applying these things when they are new?

A Yes.

BY THE CHAIRMAN:

Q Would you look at Exhibit 176 for a moment?

A Yes, sir.

Q The photograph at the foot, diesel electric road switcher. Was that dual control?

A No, I think that one is not. That is the one that was American built.

BY MR. SINCLAIR:

Q Now, Mr. Emerson, what is your view as to the use of dual controls on diesels on the Canadian Pacific when firemen are removed?

A There is no mechanical difficulty in the application of dual controls and no difficulty in the use and operation of engines with dual controls. As to the need for them, in yard service there may be a relatively few assignments where dual control stations would be necessary. They would be relatively few?

Q Yes?

A In road service from a check that has been made I don't know of any instance in which dual controls would be required unless it was on the basis of expediency.

Q Expediting the movement?

A Yes.

Q What about any other kind of appliances

like radios on the road and fixed signals in the yards? Could you use those?

A They are feasible and could be applied. My personal inclination at the present time would be to prefer dual controls in the instances in which they might be required in yard service.

Q And on the road possibly radios at some places?

A Possibly radio in road service.

BY THE CHAIRMAN:

Q To what extent do you say that dual controls are necessary? You are speaking about certain geographical places, I suppose?

A Yes.

Q Do you know them? What do you say they are?

A No. I see your point, sir. I have not at this time made a complete check of the system to determine the locations where dual controls might be necessary. From reading the evidence given here, I understand that there are several locations in Toronto. I do not recall any others. They are in any event relatively few.

BY MR. SINCLAIR:

Q And as to dual controls on the road you say --

A There are no instances in which they are required of which I am aware.

Q After the check that you have made?

A Yes.

Q But you say you would contemplate them maybe in some instances on some assignments to

1. The first part of the paper

is devoted to the

study of the properties of the

operator T .

It is shown that T is a linear operator

and that

$T^2 = T$.

It is also shown that

T is a projection operator onto the subspace

defined by

$T^2 = T$.

It is also shown that

T is a linear operator and that

$T^2 = T$.

It is also shown that

the operator T is a linear operator

and that $T^2 = T$.

It is also shown that

T is a linear operator and that

$T^2 = T$.

It is also shown that

T is a linear operator and that

T is a linear operator and that

$T^2 = T$.

It is also shown that

T is a linear operator and that

$T^2 = T$.

It is also shown that

T is a linear operator and that

expedite movement?

A Yes, that is possible.

BY THE CHAIRMAN:

Q Well, we are just talking about possibilities here. Dual control on any locomotive arises because you have no one on the lefthand side of the cab. I am talking about yard switching or switching. It would only be necessitated by that?

A It would only be necessitated by the convenience in some cases of taking signals through the lefthand side, yes, sir.

Q If you had no fireman then in certain geographic situations you would have to have dual controls?

A Yes.

Q I suppose you have an alternative, that if the conclusion were that firemen were not necessary throughout the system then in certain geographic spots you could at times put another man in the cab?

A As an alternative --

Q To dual controls?

A It would be possible but I would much prefer dual controls in those isolated instances.

Q Well, I was thinking about either a man or a machine. That is all.

A Yes, I understand. You are speaking here, sir, I take it, of the employment of an additional man.

Q Well, if firemen are dropped and you have the engineer alone and he has to be able to see from the lefthand side, then he could either move across if he has dual control or somebody else could be put in there, whether you call him a fireman or conductor or vice-president.

HON. MR. McLAURIN: They might need another brotherhood to keep track of them.

BY MR. SINCLAIR:

Q I think there is a point that might be brought out here. If three men were not needed for the switching movement on the ground on a specific move, would there be anything to preclude one of the ground crew, whether on the road or in the yard, positioning himself on the left side to assist in the movement where that was necessary?

A Not at all. That is precisely what I had in mind. That would be quite feasible and, of course, would not entail extra expense. But I perhaps misinterpreted. I thought the suggestion was there might be instances in which an additional man should be employed on an assignment, shall we say.

BY THE CHAIRMAN:

Q No, no, I am talking about the use of a man or a machine. Then you would say that instead of preferring to have dual control in all cases there might be situations where you

would prefer for the time being and in that situation or those situations to put another man in the cab where the fireman used to be?

A To take one of the existing crew members and put him in the cab temporarily during this movement.

Q All right, take that, but you might have a situation -- I don't know whether you have or not -- where the three train crew members might be needed on the righthand side or elsewhere and, as I think in England, you might have for a particular assignment an extra man in the train crew?

A Possibly.

Q To locate himself in the cab. I am only asking for information.

A I understand. I see your point. All I can say is in that instance we would proceed to hurry the application of dual controls.

Q Then in any event you would prefer dual controls?

A Very much, sir.

HON. MR. McLAURIN: From the evidence you have already introduced, Mr. Sinclair, I take it that as counsel you take the responsibility for saying that the position of the C.P.R. is that in the Victory Mills area at Toronto dual controls are necessary.

MR. SINCLAIR: That is right.

HON. MR. McLAURIN: Is there any other

place on the system?

MR. SINCLAIR: We know that they are necessary where there are at the same time three factors in existence, restricted overhead clearance, restricted side clearance and ~~lefthand~~ curvature.

HON. MR. McLAURIN: Well, you know your railway. What are the other places?

MR. SINCLAIR: Those are the only ones we know of where they are necessary.

HON. MR. McLAURIN: I will put it this way. I do not want to be tying you down. The Brotherhood may come up with another one that you will have to concede. However, your position is that the only one you know of today is the Victory Mills set-up, that area.

MR. SINCLAIR: Well, the Ashbridge's Bay group so called, the waterfront group in Toronto.

HON. MR. McLAURIN: That is it.

MR. SINCLAIR: That is where they are required.

THE CHAIRMAN: And Winchester?

MR. SINCLAIR: Winchester?

THE CHAIRMAN: Your man from Smiths Falls said something about Winchester

MR. SINCLAIR: Chesterville. He said if you did it with the locomotive one way and then he said afterwards a man could get on the top or it could be switched with the train moving in the opposite direction. That is quite so but there would be a case where you would have to

weigh what you wanted to do, and I would say that would be expedition rather than requirement. As counsel I have only had drawn to my attention the Toronto situation where you have the combination of the three factors existing at the same time which makes them what I might call required, the factors of restricted overhead clearance, restricted side clearance and curvature.

THE CHAIRMAN: Well, there may be buildings go up tomorrow.

MR. SINCLAIR: Quite.

HON. MR. McLAURIN: As far as you know now and representing your company, the only place you suggest that you need dual controls is in that harbour situation in Toronto.

MR. SINCLAIR: That is as far as I know, subject to this expedition factor. With your permission, Mr. Chairman, if I could have about ten minutes I could finish with Mr. Emerson.

BY MR. SINCLAIR:

Q Mr. Emerson, in view of your experience, in view of your responsibilities with regard to operations and with regard to the efficient operation of the Canadian Pacific and its proper functioning, are firemen in your opinion required on road freight and yard diesels?

A No, they are not.

Q In coming to that opinion what have you taken into account?

A First of all I have looked at it from the question of safety. Now, the only contribution that a fireman can make to safety in operations -- I am dealing with this in principle, in theory -- would be from the standpoint of lookout. In yard service, to take that first of all, with proper positioning of the ground crew the fireman is not necessary. In road service we have the head end trainman on the lefthand side of the cab and it is not necessary to duplicate his performance as a lookout.

Q You say if the ground crew position themselves properly. Do you or do you not believe that the removal of the firemen will have some effect on that?

A I believe that the removal of the fireman will improve our position on safety. In the first place, it will compel yard crews to position themselves properly where they can work in the view of the engineman. In so doing this will remove the situations in which, through division of responsibilities, unnecessary division of responsibilities, mishaps can and have taken place.

Q In your opinion, Mr.Emerson, is there any other way in which the removal of a fireman would affect the safety factor?

A Well, another question considered was the aspect of his mechanical duties.

Q I was thinking of safety. You talked earlier about removing the unnecessary division of responsibility?

A Yes.

Q Now, have you in mind anything in particular in regard to that, Mr. Emerson, -- in regard to distraction or anything of that nature that we have heard something about here?

A Yes, I have heard the remark here about the possibility of firemen being a source of distraction to other members of the crew and I agree with it. I think it is desirable to remove it.

Q Mechanical duties, Mr.Emerson?

A As to mechanical duties, the simple fact is that the advent of the diesel engine has removed the last vestige of the mechanical duties of firemen and there is nothing left for them to perform.

Q Efficiency?

A As to efficiency, the removal of firemen will not adversely affect the efficiency of our operations.

Q Now, those are your views, personally?

A They are.

Q And in coming to your own personal views, have you or have you not consulted with the officers who are under your jurisdiction and have responsibility at their own levels for the safe and efficient operation of the railway?

A I have consulted in the course of my travels over the system and had discussions with officers on operating matters. I have had occasion to seek from a number of them their views on these questions and I know of no operating officer of the company who does not believe that firemen can be -- let me put it this way -- that diesel locomotives in freight and yard service cannot be operated safely and efficiently without firemen.

MR. SINCLAIR: We have two or three things that we undertook to get for Mr.Emerson. I hope that we will be able to get them by the morning and in any event if they do not come through I think I am now completed.

THE CHAIRMAN: There will be another opportunity.

MR. SINCLAIR: Yes. Perhaps Mr.Emerson can answer my friend tomorrow.

THE CHAIRMAN: Shall we adjourn?

--- The Commission adjourned at 4.05 p.m. until
10.00 a.m. Wednesday, May 8, 1957.

ROYAL COMMISSION ON EMPLOYMENT OF FIREMEN
ON DIESEL LOCOMOTIVES IN FREIGHT AND YARD
SERVICE ON THE CANADIAN PACIFIC RAILWAY

33

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ROYAL COMMISSION ON EMPLOYMENT OF
FIREMEN ON DIESEL LOCOMOTIVES IN
FREIGHT AND YARD SERVICE ON THE
CANADIAN PACIFIC RAILWAY

Proceedings of public
hearing held at Ottawa,
Ontario, Wednesday,
May 8, 1957

PRESENT:

Hon. R. L. Kellook,	Chairman
Hon. C. C. McLaurin,	Member
Hon. Jean Martineau,	Member
Douglas M. Fraser,	Secretary
A. R. Winship,	Asst. Secretary

APPEARANCES:

D. W. Mundell, Q.C., C. J. A. Hughes, Q.C.,	Representing the Commission
I. D. Sinclair, Allan Findlay,	Representing the Canadian Pacific Railway Company
David Lewis,	Representing the Brotherhood of Locomotive Firemen and Enginemen

Wednesday,
May 8, 1957.

33rd DAY

MORNING SESSION

-----The Commission opened at 10.00 a.m.

R. A. EMERSON, recalled.

THE WITNESS: Mr. Lewis, before you start perhaps I could respond to certain questions which were asked yesterday and place them on the record. The first is in respect to the experience of Canadian National Railways in their multiple unit operation through the Mount Royal Tunnel over the years 1952 to 1956 inclusive. I am informed that there have been 13 crossing accidents and two derailments. It will be recalled I stated that none of those accidents were classed as train accidents due to employee negligence, which means that in each case they were under \$375 damage to railway equipment or else not attributable to the responsibility of personnel in compliance with the rules.

Second, in regard to European yards, I have made some further inquiries and I am informed that in France the major yards are now automatic hump yards. There has been extensive reconstruction following the destruction which occurred during the last war. I am informed also that in those yards flat switching takes place, the marshaling of trains after the cars have been humped.

In Switzerland, the main yards are principally manual hump yards with some flat switching taking place. Also of course in all cases there is flat switching to industrial

and team tracks and that sort of thing.

BY MR. LEWIS:

Q Just one or two questions about your European experience which I am afraid I cannot match. I have given serious consideration to suggesting that perhaps we cancel the Canadian tour and make a European tour instead.

THE CHAIRMAN: We may have to choose.

BY MR. LEWIS:

Q First, am I right in understanding that at no time was there a head end trainman in the cab of European locomotives?

A As I explained, that statement would not be literally correct because in certain instances, in Switzerland, for example, under conditions in which a helper is employed on a freight train, he counts as a member of the train crew under the formula they have respecting the number of personnel required in flat country and on grades of 2.5 per cent or over, and he assists if required in coupling, uncoupling and switching.

Q Yes, but let me put my question another way. Am I right in thinking that in Europe you never had three men at the same time in the cab of a freight train?

A I think that is correct, yes.

Q And in Canada and in the United States we have had that for many years?

A In freight service.

Q In freight service?

A Yes.

Q As a matter of fact, Mr. Emerson, do you know where the head end trainman on the Canadian Pacific and other Canadian railroads was before the seat in the cab of the engine was provided, if I remember some forty years ago?

A No, I do not remember that, Mr. Lewis.

Q Have you heard about it? I do not expect you to remember it.

A No. I do not recall, but there was some question back many years ago about providing a seat for the head end trainman where he could ride. Before that I expect primarily he rode on the fireman's seat, the single seat on the left-hand side of the cab because the fireman presumably was down on the deck a good deal of the time.

Q But you are sure he was in the cab before the seat was provided?

A I know that on some United States railroads it had been the practice for the head end trainman to ride on the tender

a cupola on the tender on which he rode.

Q You mentioned yesterday at page 4410 of the transcript a resolution of the International Association of Railways passed in June 1956?

A Yes.

Q Requesting that the handling of a diesel locomotive be entrusted to a single person?

A I do not know whether I would accept the word "requesting." I do not think that was the wording of the resolution as adopted.

Q "The handling of a diesel locomotive may be entrusted to a single person"?

A Yes.

Q That was the wording you quoted?

A Yes.

Q I imagine that in your discussions in Europe you were no doubt informed of a resolution on the same subject passed by the International Transport Federation, which is the federation of unions?

A No, I was not informed of that. The first reference I heard to that I think was during these proceedings.

Q None of the railway executives in Europe mentioned that the unions were requesting that they have a helper in the cab of every diesel unit?

A No.

Q I notice from your Exhibit 180, Mr. Emerson, that of the five railways about which you gave information in that exhibit, three of the larger countries, Great Britain, France and Germany; in each of those cases you have a fireman or helper with the engineman, or rather you have a second man with the engineman in the cab of the diesel?

A In Great Britain, France and Germany?

Q Yes.

A Yes. I think as I explained yesterday, this exhibit does not show that the use of diesels in freight service on the British railways has up to the present time been very limited. I understand it has been for trial runs only, but the manning regulations, the agreement with their union as it stands requires the employment of a fireman under those conditions.

Also I would point out that on the French railways, as I think I mentioned, the two men on the engine comprise the whole train crew, the whole crew on the train.

On the German railways you will see a certain footnote which puts certain qualifications on the position of the conductor or second man on the engine.

Q He would not be required on the engine

if the train consisted of only 15 cars or 30 trailing axles?

A Less than 30 trailing axles; let us say, 14 cars.

BY THE CHAIRMAN:

Q I notice that in the case of the German Federal Railway reference is made to a byman; what does that mean?

A That is the English translation of whatever word they use. That was the word as they put it to me. It is a different term from the fireman, whom they call a boiler tender, which I think is the translation. I think we might construe the byman to be a helper by the engineman or something like that.

BY MR. LEWIS:

Q You do not happen to have the spelling of the German word used?

A No, unfortunately I do not. I do not think I ever saw it spelled out. Mr. Lewis.

Q I notice on the British railways they have a very large proportion of diesels.

Exhibit 174 indicates a large proportion of diesels over 350 horse-power. You say that they have used them in freight only experimentally; do they use them in passenger or in yard service?

A Those are primarily in yard. On the British railways they have I would judge

from what I know at the present time perhaps half a dozen diesel locomotives in the order of 1,500 to 3,000 horsepower which they use again, I would explain, primarily in passenger service.

Q Your evidence in Exhibit 180 is that in yard service their contract with the railway union does not require them to have a helper in the yard diesel engine?

A That is correct.

Q Is that what you were informed?

A That is correct.

Q And the same for France?

A And the same for France.

Q And the same for Germany?

A And the same for Germany.

Q That was the information given you by the executives of those railways?

A Yes, and confirmed by my observations.

Q And I understood also from your evidence, as well as from Mr. Koster's evidence -- correct me if I am wrong -- that outside of the engineer, all railway employees -- perhaps that is too wide -- a large number of the railway employees, both in train service and around the stations may be used for various work interchangeably; is that right?

A As I explained yesterday, in certain cases in performing switching en route

they may call on the station staff to assist. I think generally the limitations on the type of work performed by different classes of employee are not nearly as restrictive as they are in this country.

For example, on numerous occasions I noticed the fireman on steam locomotives get down on the ground as their engines were backing into the passenger station and signal the engine man to back up for coupling to the train and then stand between the buffers and make the coupling and connections.

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Q And no switchman around at that time?

A That is correct, or no car man to make the couplings.

Q With this very short visit to Europe I will come back to Canada. We have been given some information about this, Mr. Emerson, but perhaps in your position you could give the Commission information about your diesel purchasing program from now on?

A The diesel purchasing program for 1957 is 159 units, subject to check -- 161, including two booster units for use in St. Luc yard.

BY HON. MR. MARTINEAU:

Q Is this for 1957?

A This is the 1957 program, sir, the current year.

BY MR. LEWIS:

Q That does not include R.D.C.'s?

A No, I am dealing with diesel locomotive units as such. At the end of this year we should have a total of 831 units, and I would anticipate that the operations of the railway would be substantially all dieselized by 1961.

Q Roughly what total of diesel units would you expect to have when the railway is entirely dieselized by 1961?

A Well, very roughly, 1958, 1959, 1960, three years, perhaps 450 more units, something like that.

Q A total of somewhere between 1,250 and 1,300 units?

- A Something of that order. That is a quick estimate, as you will appreciate, Mr. Lewis.
- Q Now, as to your R.D.C. program, your rail diesel car program, I am led to believe you have quite a purchasing program on R.D.C.'s as well?
- A At the present time I believe we have 41 R.D.C. units in service and six on order.
- Q Is it your intention, is it the policy of the railway to acquire increasingly more R.D.C.'s?
- A Additional units, yes, as studies indicate the services in which the employment of R.D.C. units will bring about reductions in cost and improved service, yes, sir.
- Q Am I right in thinking that experience to date shows that you have reason to believe that these self-propelled multiple unit passenger trains can be run efficiently and economically in the places where it is suitable to run them? Is that right?
- A Yes. In each case -- I think I would say in amplification of that that in each case the operation of the R.D.C. cars has resulted in substantial economies from an operating standpoint.
- Q And would I be right in suggesting to you that it is the policy of the C.P.R. to turn as much of its passenger traffic to multiple unit R.D.C. cars as possible?
- A No, I would not accept it quite that way. I would say that our policy is to use the most

economical, efficient form of providing passenger service, whether it be R.D.C. or locomotive hauled equipment.

Q In that case let me put my question this way. Am I right in suggesting to you that you expect an increasing proportion of your passenger traffic to be on multiple unit R.D.C. rather than on locomotive hauled passenger trains?

A I think that would be a fair expectation, yes.

Q So that as the years go by you will have fewer and fewer passenger trains employing both engineer and helper? Is that not right?

A Yes, quite correct.

HON. MR. McLAURIN: The country is going to grow so you are going to have more trains. With 25 million people you will have more trains.

THE WITNESS: That is quite possible too, yes.

MR. LEWIS: I think His Lordship has perhaps forgotten the evidence Mr. Gossage gave us at the very start, that passenger traffic goes more and more in other directions and does not go to the railway. It will be by plane and motor car but not by railway.

BY MR. LEWIS:

Q I think you referred yesterday -- if it was not yesterday it was the day before -- to the Grand River Railway and the Lake Erie and Northern Electric which are subsidiaries of

the C.P.R.?

A Yes.

Q And you made the rather positive statement that the trolley man on those railways always stands at the back of the engine pulling the trolley cord and never passes signals or keeps a lookout. Is that right?

A I don't know that I would not say he sometimes keeps a lookout. After all, he stands there and I suppose he must inevitably watch where they are going at times. But my information is that he is not used for passing signals to the engineman for the operation of the train or the movement they are making.

Q Have you ever watched the operation?

A Yes, briefly.

Q You have never seen the trolley man used as a signal passer?

A No.

Q That you can recall?

A No. I have difficulty in understanding how he could be used as a signal passer under the arrangement that they have because, you see, he is stationed in the trailing part of the body while the engineman is in the forward part of the body and between them there is the switch gear and other equipment which makes communication across the body or through the length of the body rather difficult.

Q What is the catenary that has been referred

to? Is that the overhead wire?

A That is the overhead wire. To clarify that, perhaps you would like to look very briefly at Exhibit 179, and in the bottom photograph you will see just faintly the overhead wire above the locomotive.

Q That is what is called a catenary?

A It is the catenary construction.

THE CHAIRMAN:

Q Does that not also apply to Exhibit 182?

MR. SINCLAIR: And 183 also.

THE WITNESS: Yes. There may be a technical distinction here. The trolley system is generally not hung on a catenary as such. The catenary, the name derives from the form of the curve in which the string or chain hangs when suspended loose. There is a cable hung above the current carrying wire from which the current carrying wire below it is attached by suspenders, vertical strings. On these modern electrical operations you see with this locomotive unit on the bottom of Exhibit 179 there are two pantographs. The pantograph is the current collecting mechanism. It also appears on the top of the cab of the locomotive at the top of Exhibit 179 but only in part. I apologize for the error of the photographer in that matter. That is a yard engine which has one pantograph. The road engine has two, only one of which is in service at one time. When you get into a trolley operation such as the

Lake Erie and Northern and the Grand River Railway it is more similar to a street car and they do not have the heavy overhead construction.

BY THE CHAIRMAN:

Q In view of your answers, looking at Exhibits 182 and 183 what is the inside of the cab of these locomotives like? Is it all open or is there a partition?

A No, it is not partitioned. As I recall it, between the two ends of the cab there is the switch gear and contactors and that sort of thing which makes it -- well, let us say at the least not feasible to communicate from one end of the cab to the other.

BY MR. LEWIS:

Q Not even orally?

A I would think not, Mr. Lewis.

Q Once the trolley man has put the trolley on the overhead wire and they are going in one direction he does not have to stand there and hang on to the cord, does he?

A No, my information is he stands there and hangs on to the cord when they are in movement.

Q All the time?

A Yes.

Q I was curious to know, Mr. Emerson, how you could tell what was deleted in Exhibit 129. I think it is 129.

A Yes, I am thinking of 129.

Q The first sheet?

A Yes. Well, I looked at several copies of that --

Q May I interrupt you, Mr. Emerson? I am sure that was what was deleted if you said so. I am not questioning you, but is it visible from that or were you informed that was what was deleted?

A No, I was asked, as a matter of fact, and I looked at several copies, including one which was reproduced by a slightly different process than this one, and while I cannot say positively I certainly, after making the best study of it I could, reached the conclusion that it was "road switching".

Q Suppose I assume you are right, and I am quite happy to do so. Did you inquire as to why it was first written in and then taken out?

A No, I did not.

Q Have you no idea?

A Offhand, no.

Q Did you inquire, Mr. Emerson, whether there was any lapse of time between it having been first written in and then deleted?

A No.

Q Did you inquire whether this exhibit was first issued with the road switching reference in?

A No, I have just seen this exhibit in this case. So far as I know, it has not been issued other than in the form shown here.

R.A.Emerson

- Q In the same field, Exhibit 130. You seem to have assumed, Mr.Emerson, that Exhibit 130 which provides for an hourly inspection in engine room of Alco/MLW road units -- Just to make sure that I remember correctly, the MLW is the Montreal Locomotive Works?
- A Yes.
- Q Is that the Fairbanks Morse?
- A No, that is Canadian Locomotive Company.
- Q I see. You seem to have assumed that Exhibit 130 replaced all of Exhibit 129 and 129A; is that necessarily so?
- A I think it is reasonably obvious from the form. It states at the bottom, "supersedes temporary form, December 12, 1949".
- Q But does that necessarily mean it supersedes the whole of that form, or is it not more likely to supersede sheet 3 of forms 129 and 129A?
- A No, in the absence of a qualification I would have to conclude that it succeeded the whole form, the three sheets of the whole thing, which you see is headed "temporary form".
- Q Have you any knowledge as to whether this temporary form, Exhibit 129 and 129A, ceased to be distributed after April 6, 1951?
- A I think as I indicated yesterday that I am informed that there may have been instances in which the form -- the temporary form --

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was distributed for the information of firemen.

Q You say you have been informed that there may have been instances?

A Yes.

Q Well, surely if you were informed, you were informed either that they were or were not?

A It is rather difficult to run these down in the sense of pinning it down to specific places and times but I would take it this way. We thought there were then, if you like, instances in which the form was distributed -- handed out, if you will -- for the purpose I have indicated.

Q Correct me if from your information this is wrong, Mr. Emerson, but I am instructed that form 129A, the latest one of these temporary forms, was distributed to hopeful firemen as late as 1955 in 1956 in the eastern region?

A To which firemen?

Q To hopeful firemen; people who wanted to become firemen.

THE CHAIRMAN: I thought at first you said Oakville firemen.

THE WITNESS: That is what I was looking for, sir.

BY MR. LEWIS:

Q Have you any information to the contrary?

A No, I have no information. Obviously I cannot keep track of what any individual fireman might acquire under those conditions.

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- Q Mr. Emerson, I am interested in pursuing this kind of question and if I may, Mr. Chairman, I am seeking to put it in the framework to get a better understanding as to exactly what happened in relation to the firemen's duties. First, were you consulted before the proposal to remove the firemen was made in February of 1956? I mean you personally?
- A Yes.
- Q Were you present at meetings where the matter was discussed?
- A No, it was not handled in quite that way. The matter was discussed and it was then placed before me to ascertain if the proposal to submit this request for a change in the schedule met with my approval.
- Q Well, then, you would know, I suppose, as to who was first responsible for formulating that proposal? By "who" I do not necessarily mean the names of people but rather I mean the positions and departments?
- A No, I do not think I could tell you that, Mr. Lewis, as to whose mind it first originated in.
- Q No, I am interested in knowing the group that was responsible for originating this proposal. What group originated it?
- A At that time I would think the question would have arisen from the personnel department who, of course, were dealing with the organization

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on the question of the agreement.

Q That is precisely what has worried me all through this hearing, Mr.Emerson. How come that a proposition of such importance and having to do with the operating part of your railway would appear to have originated in the minds of the personnel department of your railway?

A Well, I think the answer to that is very simple, Mr. Lewis. It has been obvious to operating personnel for some years that firemen were not required on yard and freight diesels. Their elimination was not an operating problem but rather a problem under their agreements.

Q You mean that you had informed the personnel department -- you and your operating department had informed the personnel department -- before February 1, 1956, that as far as you were concerned you did not need them? Is that what you are saying?

A I am saying we never informed them in the sense that we wrote them a letter but certainly they were aware of it.

Q How does one become aware of that sort of thing in a large organization like the Canadian Pacific Railway? Were there any formal discussions at all?

A Yes, there were formal discussions but also there were many informal discussions.

- Q A question of this importance, I am sure you will agree, was as the result of the informal discussions, is that it?
- A I am sure there have been discussions over the years concerning this matter.
- Q Yes. Now, these questions, Mr.Emerson, relate to the duties which are also very significant. If I understood you correctly, yesterday, on pages 6 and 10 of Exhibit 7 -- you remember the bulletin with regard to the duties of firemen issued in October of 1956?
- A Yes.
- Q And it starts, -- I am quoting from memory -- with a statement to the effect that there has been some misunderstanding about the duties of firemen so I want to clarify them. Now, Mr.Emerson, how could there have been any misunderstanding? Did your operating officers not know what the firemen were in fact doing and had been for some years?
- A The exhibit clearly states that previous to this there had been some misunderstanding in the minds of enginemen and helpers.
- Q But I am interested to know how that misunderstanding could have arisen. Do you know?
- A I do not think I could run down how it could have arisen as to the whole history of it.
- Q Well, let us take it step by step. Did you or your officers not know that firemen were patrolling diesel engines in 1949, 1950, 1951,

1952, 1953, 1954, 1955 and 1956? Didn't you know?

A In some instances certainly we knew because after all the original temporary form required such patrols to be made.

Q It required it and the temporary form was distributed in the eastern region and therefore you knew they were being made?

A Yes.

Q Is that right?

A Yes, I think that is a fair statement.

Q But you knew that even in the western region where the temporary form had not been distributed patrols were taking place?

A In some instances I am sure some people knew but that of course points up exactly the purpose to which the instructions contained in sheets 6 and 10 of Exhibit 7 were directed.

The Canadian Pacific is one railway system and naturally we want, so far as it is feasible and practicable to do so, to establish uniform practices across the system.

Q And it took you the seven years until October 1956 and after the Board of Conciliation had heard some considerable evidence to find out that the practice was not uniform and that the practice was undesirable?

A Well, it certainly pointed up, if you like, the variations in practice which existed.

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Q Yes, and that is when you issued that bulletin?

A That is correct.

Q Then it takes you apparently, Mr.Emerson, another seven or eight months -- seven months -- before you issue a further bulletin or have a further bulletin issued. You indicated that you personally gave instructions that it be issued last week.

A That is correct. You are referring now to Exhibit --

Q Exhibit No.184.

A That is correct. It had seemed to me that when the bulletin referred to in Exhibit 7 was issued which states in part, "a helper is not required to patrol diesel units except as directed by the engineman or as may be required for the operation of steam generators," that patrolling would cease with the exceptions listed. However, I was surprised to find on my observations from the evidence given by officers in this case -- from reading the transcript -- just how extensive patrolling was and that it was being done unnecessarily in a number of cases.

Q Well, Mr.Emerson, you say in your Exhibit 184 -- in the bulletin which you caused to be issued last week about prohibiting the opening of engine compartment doors on road switcher units in motion, and prohibiting the passing between road switcher units in motion when

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the switchers are not equipped with catwalks --

A Yes.

Q Did you not know about the dangers involved in the opening of engine compartment doors in motion and about going from one unit to another in motion without catwalks? Did you not know about that last October, Mr.Emerson?

A Yes.

Q But you did not prohibit it?

A Let me put it this way. It is very difficult to make a complete set of prohibitions of all the things that must not be done under all circumstances. You have to rely to some extent on the judgment of an employee not to expose himself to unnecessary hazards. That after all is the principle that is set out in the code of safety rules and safe practices. However, it came to my attention that there were some cases in which engine compartment doors were being opened and in which men were passing between road switcher units in motion not equipped with walk ways, and in order to set the matter perfectly clear I instructed that this bulletin be issued.

Q Was there, Mr. Emerson, any injury or accident as a result of this practice between October, 1956 and the first week of May, 1957?

A No, I do not think so. Of course, we do not use the criterion that there has to be an accident before you establish a safe practice. That is a little bit like locking the barn after the horse is gone.

Q I appreciate that and I may have something to ask you about that practice later. What I am interested in is, if you look at page 6 of Exhibit 7, not only did you not prohibit patrolling as late as October, 1956, but I suggest to you -- correct me if I am wrong -- that by implication you permitted it. You said the helper is not required to patrol diesel units except as directed by the engineman. The implication is clear, is it not, that if he is directed by the engineman you had no objection to it being done?

A There are very few things in life, Mr. Lewis, which, if you do them once cannot be done better a second time, but I certainly did not expect that an engineman would request helpers to patrol diesel units, and this refers to road switchers, which are not equipped with walkways when in motion.

Q Or open doors, I suggest you also add, or open doors of the leading unit, let us say, when the engine is in motion; you now object to that

as well?

A Yes. Of course, that practice was referred to in the mechanical examinations for enginemen, pointing out the undesirability under any conditions of opening doors unnecessarily because, as I think I mentioned yesterday, of the admission of large volumes of air and dust which do not pass through the filters to the engine compartment.

Q Where is this reference to mechanical examinations; can you tell me?

MR. SINCLAIR: Exhibit No. 147.

BY MR. LEWIS:

Q Where is that reference?

A Exhibit 147, Form MP-505, question 4, at the bottom of the first page.

Q You said that prohibits the opening of doors at all, even for some adjustment that may have to be made, did you?

A No, I think, as I said, that points up the undesirability of opening doors.

Q You think, do you, Mr. Emerson, that the opening of doors while the engine is in motion at reduced speed is more dangerous than, say, walking on top of the cars of a moving train?

A Yes, I think it might well be.

Q Why?

A Well, in opening the doors on the engine you are down below the level of the top of the equipment. There is quite a swirl of air,

particularly on a windy day between the equipment and you get drafts, gusts and that type of thing. On the exposed position on the top of the car, you are not quite exposed to the same conditions. You do not get changes in air currents that you are apt to get here.

Furthermore, the man on the top of the car is concentrating on keeping his footing whereas the man in these circumstances would be concentrating on whatever he opened the door to do and the door might catch him. It is unnecessary, and it is prohibited.

Q I can understand your position that you claim it is unnecessary, but I am interested in the safety question for the moment of that practice. Am I wrong in my feeling as a result of the little bit I have learned about railways in the last couple of months, that it is quite common in railway operations for a trainman, let us say, to have to hang out, hanging on to the side ladder of the car while the car is in motion?

A In switching movements?

Q Yes?

A That is common, yes.

Q And that the head end trainman might frequently have to hang out in order to make a running inspection of a train around a curve?

A Hang out through the window?

Q No, I do not mean through the window, but go

out on the steps or the gangway, sometimes if he cannot see through the window, and just hang on to the rail on the door, wherever he can get support, and look back at the running gear of the train; is that not right?

A He can get support in several ways. He can get support from the hand rail on the side of the engine compartment as well as the hand rail which runs along the edge of the Walk.

Q Yes?

A Yes.

Q And that is done?

A That is done on occasion, I think, yes.

Q And you are suggesting that the opening of these doors -- remember, I said when the train is in motion at reduced speed -- standing on a firm catwalk with a hand rail to hang on to or the frame of the door to hang on to while he makes his inspection, that is more dangerous than walking on the top of cars or hanging out to make a running inspection, and so on?

A Yes, I think it might well be.

Q Do you really believe that, Mr. Emerson?

A I certainly do.

Q Is it not more correct to say your position would be -- I am trying to be helpful because I am trying to understand this -- that where the danger is necessary to the operation you have to take it and where it is not necessary you do not have to take it. Is not that

your position rather than the danger is greater?

A No, I do not take it that way, Mr. Lewis, except to say that no employee should expose himself to any hazard when it is not required.

Q You learned about this lack of necessity for patrolling and opening doors no earlier than May, 1957; that is the point that bothers me and I would be grateful for an explanation.

A That is not what I said, Mr. Lewis. What I said was that I knew about the lack of necessity for patrolling and opening doors before, but I did not anticipate that in the light of the instructions that had been issued in sheets 6 and 10 of Exhibit 7, that practice would continue to be indulged in, particularly to the extent it was.

Q I am just as bewildered and I would be grateful for an explanation as to why you did not know it before October, 1956, with seven years' experience with diesel engines, many of them road switchers, and that only after the conciliation board had entered into this issue did you become aware of these dangers and problems?

A You put it up to October, 1956, but you have to move that date back some months. This matter was drawn to my attention and I took the matter up with our regional officers and other officers concerned to get a full expression of their views as to this practice

and as to the bulletin that was issued, whether they had any comments on it, and that takes time in correspondence.

Q Never before the thing occurred that was mentioned before the board of conciliation, had the danger of these patrolling practices, these opening door practices, been drawn to your attention; is that what you say?

A I do not think the extent to which the practice was carried out was drawn to my attention, no.

Q Does the extent matter, if it is dangerous?

A I think so, yes.

Q You mean if a dangerous practice is indulged in by 10 per cent of the people concerned it is of less concern than when it is indulged in by 75 per cent?

A What I mean is this. If it is indulged in by 75 per cent of the people it is necessary to deal with it on a system basis because it is a widespread misconception. The only way to deal with that sort of thing efficiently is to issue a bulletin such as was done in this instance, which would make the matter clear in the minds of everyone concerned.

Now then, taking the other case, if there is the odd instance in which this practice is carried out, the best way to deal with that is with the individual. Now, you have those two extremes.

Q Did you instruct your local officers before issuing your instructions to do something about this practice which you say you knew to be dangerous?

A No, I did not say that. Obviously, when I issued the instructions, when the bulletin was issued, I expected them to see that the provisions were carried out.

Q I suggest to you that all these alleged dangers about road switchers and patrolling have been taken notice of for the benefit of the members of this Royal Commission and for no other reason?

A Well, I would have to disagree on that. I would have to say that irrespective of whether this Commission was sitting or not, in the circumstances I have described I would have taken just the same action.

Q But you would not have known about it unless last year's proceedings and these proceedings had been in effect?

A No, I am not saying that, but I will go this far with you, that these proceedings and the spotlight which has been turned on these questions has undoubtedly focused attention, concentrated attention on matters which they might not have received otherwise.

Q Served an educational purpose for you and your officers?

A I think I would even accept that, yes.

Q Well, it is an ill wind --

BY THE CHAIRMAN:

Q Mr. Emerson, an Alco unit and a MLW unit are two different units, are they?

A They are the same in this sense, that the Alco unit and the MLW unit are built to the same design, the same plans, but the early units we acquired were purchased in the United States where they were made by the American Locomotive Company, hence Alco, and subsequently the Montreal Locomotive Works, which was a subsidiary and still has, I think, some financial connection with Alco, was established to manufacture diesel units. We bought these units in Canada from the Canadian manufacturer, but they are substantially the same units.

Q Would you look at Exhibit 130?

A Yes, sir.

Q The description there, Alco - MLW, does not mean that this is an inspection of another make of unit, but it is simply an additional description of really the same unit, apparently, and Exhibit 129A, where apparently it is directed to only Alco 1500 horsepower diesel-electric road freight locomotives, whereas Exhibit 130 is Alco - MLW road units?

A It is a change of name for the same type of unit which was built by the same manufacturer, but the nameplate was changed.

Q You did not have this type of instruction out for the road switcher type?

A No, sir, I think not.

BY MR. LEWIS:

Q You dealt yesterday with the four protective devices?

A Yes.

Q And you also made the statement at some point in your evidence that patrolling was unnecessary?

A Yes.

Q I should like to put to you a few matters about which I have been instructed and may I say to the Commission that if my questions are not clear it will be due to my ignorance of mechanical and electrical matters. I am instructed that it not infrequently happens that an engine will not make the backward transition; it will make a forward transition but not a backward transition; do you know as to that?

A No, I could not agree with you on that, Mr. Lewis, on the basis of the information that comes to me.

Q You could not agree on what?

A Your suggestion that it frequently happens that an engine will not make a backward transition.

Q I did not say frequently, I said not infrequently.

A Excuse me, that is a fine distinction.

Q Does it sometimes happen?

A Well, I will put it this way: I cannot

say that it never happens. It can happen. I recall, and I see a great many communications, but I can recall no instance in which such an occurrence was brought to my attention.

Q Perhaps the reason for you not getting that kind of communication will become obvious as I proceed with this subject. I am dealing with the failure of an engine to make a backward transition on the road.

A What kind of unit?

Q I am instructed any one of these units.

A Any one of these units?

Q Let me put this to you, Mr. Emerson.

I am instructed that if that happens and when it happens the engineer reduces his throttle to No. 4 or No. 5 position. The fireman is sent back by him and the fireman isolates the unit which has failed to make a transition. That may be indicated by a wheel slip light. When he has done that the engineer puts the throttle back to No. 8 position and the fireman puts the unit back on the line and away she goes?

A Yes.

Q From your knowledge would that be correct or incorrect?

A Well, I cannot say as to that, Mr. Lewis, without looking up the instructions. I do

not carry all of these things in my mind, but that might be one way of dealing with it. I am not certain of course that it is by any means the only way.

Q Just assume for the moment that it is one way of dealing with it.

A Yes.

Q Assume, secondly, that this is done, as I am instructed it might easily happen, while you are going up and down a hilly country. I am instructed that that is where it happens mostly.

THE CHAIRMAN: I want to follow your point. When an engine refuses to make a backward transition I would have thought that that would mean when the train was backing up.

MR. LEWIS: No, I am instructed that is not what it means. As I say, I am putting my instructions to you with great hesitation.

THE CHAIRMAN: I just want to follow it.

MR. LEWIS: I am instructed that you have the forward and backward transitions and that that has nothing to do with the particular direction of the movement of the engine. It has to do with the change from series to parallel and back again, whatever that may mean electrically, which is something I have not looked into as yet. That may happen as you go up and down hill. The engine will have to

make the transition from series to parallel and back again from parallel to series in order to perform its work, and that it not infrequently, particularly going up and down hills, loses its power because it fails to make the transition back from parallel to series. If I remember my instructions correctly, I am instructed and I put it to the witness that when that happens, they can put it back into loading in the way I have indicated.

BY MR. LEWIS:

Q The point I am coming to is this: if you had to go up another hill and you had lost power due to this temporary failure, would it not be of some advantage to the railway to have someone who could assist the engineer in putting the unit back on the line?

A Well, I will certainly say, Mr. Lewis, that it does not happen frequently enough to warrant the employment of a person to deal with it. It is very rare.

Q All right, you say that you would not need to employ a person to deal with it, but I am asking you whether that would not be of some assistance; if my illustration to you is correct, whether that would not be of some assistance?

A No material assistance, no.

Q Well, I am instructed, Mr. Emerson, that particularly in the mountain areas of Canada one might have the bad luck to have an engine stall while it is going up a grade. My instructions are that it would not have to be a controlling grade, just a considerable grade, and if that happened you would increase the danger of breaking a coupler or pulling a draw-bar when you started up again. My advisers call it, lifting the train.

THE CHAIRMAN: Starting up again from what?

MR. LEWIS: On the grade. If you are going up a grade and the engine stalls, for some reason loses power or whatever it may be, and they fix the engine by making adjustments and then have to start the train up again on a grade.

THE CHAIRMAN: I want to understand your question. When you say start the train up again, you mean the train has been brought to a stop?

MR. LEWIS: Yes, the engine has stalled and the train has been brought to a stop.

THE CHAIRMAN: Then the unit or multiple units, whatever it is, is in position to apply its full power?

MR. LEWIS: You get it to that position.

THE CHAIRMAN: Then it starts?

MR. LEWIS: Then it starts, and my instructions are that in that situation, when you start a train while you are on a grade and still have to go up, there is a risk of pulling a draw-bar, of breaking the train at some point, either by pulling a draw-bar or breaking a coupler, that that is increased many fold.

THE WITNESS: Well, I do not like the use of your word "danger" or "risk" of pulling a draw-bar.

BY MR. LEWIS:

Q Possibility?

A Possibility.

Q Let me use a neutral word.

A Many fold.

Q Yes.

A No, I do not think I would say that.

Certainly in starting a train under those conditions there is more strain on the draw-bars than under some other conditions.

Q And on the entire coupler mechanism there is more strain?

A Yes, but the coupler mechanism is designed to operate properly under those conditions and will do so generally unless there is some defect or something like that. In any event it is just a matter of the train stopping again and

taking the appropriate action.

Q The train stopping again on the same grade?

A Yes.

Q And taking appropriate action?

A Yes.

Q And lifting her again?

A Yes.

Q With the increased possibility of another draw-bar being pulled, is that the situation?

A Well, you might say the possibility is decreased at least by the fact that you, let us say, have broken one knuckle and you replace it, so your defective knuckle is out of the picture.

Q I must admit that mathematically perhaps that is so, you have one knuckle less to break.

HON. MR. McLAURIN: Is there not a question of varying skills involved on the part of the engineman? One engineman will do a particularly skilful job where somebody else may be a little more clumsy. Sometimes you get a wakeful night between Toronto and Ottawa.

MR. LEWIS: So I am instructed, Mr. Justice McLaurin. I do not want to give evidence, but I am instructed by people, engineers, conductors and trainmen who work particularly in British Columbia and the western

part of Alberta, that one of their nightmares is that they will stall on a grade.

BY MR. LEWIS:

Q Have you heard about that?

A No, I have never heard of that.

Q You have never heard of that?

A No, sir.

Q All I can say is that I have.

MR. SINCLAIR: You do not know the answers and that is why they told you that.

MR. LEWIS: My learned friend may be quite right, but we will find out about that in due course. I certainly do not think that I know all the answers.

THE CHAIRMAN: It is early yet.

---Recess.

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--After recess.

MR. LEWIS: I should like to go back for a moment, Mr. Chairman, to something I had dealt with partly earlier.

BY MR. LEWIS:

Q Mr. Emerson, my attention has just been drawn during the recess to two bulletins which I am instructed were issued from Winnipeg and I show you the first one. Since they were just shown to me, I have no copies.

THE CHAIRMAN: Will you be putting them in?

MR. LEWIS: I should like to.

THE CHAIRMAN: This one will be Exhibit 191. What is it?

MR. LEWIS: It is a bulletin issued from the Winnipeg roundhouse, September 23, 1954.

EXHIBIT NO. 191 -- Bulletin dated
September 23, 1954,
issued from Winnipeg
roundhouse.

MR. LEWIS: The bulletin is addressed to enginemen and it reads:

"The main reservoirs and oil separators on diesel electric locomotives in transcontinental passenger service are to be blown down by firemen previous to leaving the terminal and whenever possible while en route."

Are similar instructions still in effect with regard to passenger locomotives?

A There are instructions in effect that main reservoirs are to be blown out whenever practicable and on diesel locomotives at least once every four hours.

Q It says here, "while en route". You have, do you not, multiple unit diesels on transcontinental passenger service?

A Yes.

Q And that would involve, would it not, the fireman on the multi-unit diesel locomotive going from the lead unit to the second unit?

A In transcontinental passenger service?

Q Yes?

A That might be one way of doing it.

Q Well, is there any other way of doing it?

A Well, it could be done when they are stopped.

Q But this says "while en route". That would include a stop as well as in motion?

A I take it to mean, while en route, between the time they come on duty at the initial terminal and the time that they go off duty at the destination terminal.

Q And do you know whether it is in fact done while the train is in motion?

A It may be.

Q And you use road switchers in these multiple unit passenger locomotives, do you not?

A Equipped with walk-ways.

Q They are equipped with walk-ways?

A They are.

Q And in order to make this blow-down of the main reservoirs you have to open the engine doors, do you not?

A I expect that is perhaps so.

Q It is part of the engine; it would be in the engine housing? Is that right?

A It is either in the engine housing or exposed on the outside. I am not certain which.

Q Assume for the moment that it is in the housing because my instructions are that you have to open the panel doors of the engine on these road switchers in passenger service. Apparently the danger of doing that is not great enough for you to have prohibited it in the case of passenger service?

A Oh, quite, that is prohibited by virtue of the fact they are not to open the engineroom doors when running.

Q So that your bulletin of last week would prohibit this being done in passenger service as well?

A No, it would not prohibit it being done in passenger service. It would prohibit it being done in motion.

Q In passenger service?

A In motion in passenger service if it is a unit of the road switcher type and subject to check as to the necessity for opening the engineroom doors to do it.

Q But in September, 1954, according to this bulletin your railway considered it quite all right to do it then?

A No, I do not think that is the construction that can be put on it, Mr. Lewis.

THE CHAIRMAN: "En route" does not mean in motion.

BY MR. LEWIS:

Q But it was done while in motion? You have agreed with me it was done while in motion?

A No, I don't think I agreed with you it was done while in motion.

Q What did you agree with me on?

A I agreed with you that the instruction was that it should be done en route.

Q And I think I asked you, do you know whether it was done in motion?

A I don't know.

Q I think your answer was it might have been?

A Well --

Q Mr. Emerson, do you not fully expect that it was in fact done in motion?

A Obviously I cannot -- no man can look back and say that it was never done by any fireman under any circumstances. After all, I have not a sight screen to look back into the past to determine that.

Q Well, we will go at it this way. You have learned during this investigation, you say, that the practice of opening doors

on moving units was more extensive than you expected. Would that be a correct summary?

A That is a fair statement.

Q But would that not imply that you did even earlier expect that it was being done to some extent?

A No, the implication there was that being more extensive than I had anticipated the way to deal with it was by the issuance of a system bulletin rather than dealing with it on an individual or local basis.

Q I do not want to enter into any semantics, Mr. Chairman and Mr. Emerson, but if it was more than you anticipated does that not imply you anticipated some?

A I would not be surprised if an individual fireman in some circumstances does things that he is not supposed to do, no.

Q Mr. Emerson, I am sure you know the schedules of trains a great deal better than I. Am I right in suggesting to you that in the case of transcontinental passenger trains • you would have quite a proportion of the distance where there would be no stop of the train on a subdivision of say 125 miles?

A Well, you have to deal with specifics on that, Mr. Lewis. What train do you have in mind?

Q Let us take, I think you call it No. 2, or whatever train it may be?

A The Canadian.

Q In 1954 if it started from Montreal would it stop between Montreal and Ottawa?

A Yes, it stops twice.

Q And then from Ottawa?

A From Ottawa there are provisional stops until it reaches Chalk River. There are one or two provisional stops.

Q What does "provisional" mean? I am afraid that is new to me.

A It is a provisional stop in the sense that they stop if there is traffic to be picked up or discharged. In other words, it is somewhat like a flag stop with certain conditions attached.

Q I think I understand you now for the purpose of the question. Let me try to shorten this. From Montreal to Vancouver do you know of any part of the road where the train would go, subject to provisional stops which you cannot, of course, know beforehand --

A Yes.

Q Where the train might go an entire subdivision without any stop?

A Yes. There would be nothing wrong with that or with not blowing down the main reservoirs between those points.

Q Would the instructions that it be done en route not imply to you or to the fireman or to the engineman that they should not let it go

for a whole subdivision or more than one subdivision?

A Does it not say "wherever practicable"?

Q It says "wherever possible".

A Well, possible then, yes.

Q Are you suggesting now, Mr. Emerson, that the bulletin intended that the blow-down would not take place except when the engine was stopped?

A No, I am not quite suggesting that.

Q No.

A On "A" and "B" units it could be done safely when the engine is in motion.

Q But when a road switcher was used would you suggest that bulletin intended that the fireman was not to do it when the road switcher was in motion in September of 1954?

A I don't know whether the man that issued that bulletin realized that or not. In any event, it is my prerogative to say that it should not be done.

Q To say in May, 1957, Mr. Emerson?

A To disagree with him.

Q And to say in May, 1957, that it should not be done. You have never said that before?

A No, not in these specific terms, no.

R.A.Emerson

Q The second bulletin which was handed to me during the recess is from the Winnipeg Roundhouse, dated December 2, 1954. This will be Exhibit 192.

THE CHAIRMAN: What is the date?

MR. LEWIS: December 2, 1954.

EXHIBIT NO.192: Bulletin from Winnipeg Roundhouse dated December 2, 1954, addressed to enginemen.

BY MR. SINCLAIR:

Q This bulletin is addressed to enginemen and says, "the following from Master Mechanic" -- and it says in quotes --

"With reference to exchanges re steam generator water/treatment diesel electric locomotives. Will you please again draw to attention of all concerned the necessity of correct blowdown procedure being followed, that is, five seconds every ten minutes, as per letter of November 16, also the importance of taking water samples. Two instances experienced in past week of units arriving Vancouver with blow-off cock plugged with hardened sludge which had appearance of percipitate".

I stop there, Mr.Emerson. I am instructed that this work of blowing down is done by the fireman pressing a button in the cab which is on his side of the cab?

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A That is my information.

Q That would not require going out on the running walk of the engine at all?

A No.

Q Then there is this last sentence:

"Please have instructions issued to all enginemen's helpers that when they get into diesel units they must test separator blowdown to ensure that it is functioning properly for each generator."

That would be each generator of the engine?

A Each steam generator.

Q Would that be the steam generator?

A I would take it to be so.

Q Not each generator of the engine?

A Not the electrical generator.

Q Not the electrical generator?

A No.

Q This would not have to do with that?

A I would not think so, no.

Q And if you had to go from one unit to another to deal with the generator -- and I am quite prepared to say that you are likely to know more about this procedure than I -- how would you get there and where is the generator of the second unit located?

A What kind of unit is it, Mr.Lewis?

Q A road switcher?

A It is located in the short end of the hood,

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entered from the cab.

Q You can enter -- you do not have to go outside?

A Open outside doors?

Q Yes?

A No.

Q Open outside doors for the steam generator?

A No.

BY THE CHAIRMAN:

Q I suppose if you had to go from one road switcher to another you would have to go outside?

A You would have to go outside and along the catwalk, sir, and cross over on the walk ways which are provided on units in passenger service.

BY MR. LEWIS:

Q That reminds me; are you suggesting, Mr.Emerson, that you never use a road switcher in passenger service unless it has a walk way that gives you access from it to the unit ahead or to the unit back?

A I am not suggesting that you never do because "never" is a long time, Mr.Lewis. I am saying that it is not the practice that in a case where for one reason or another a unit is disabled or something like that in an unexpected situation of that kind, you might take a freight unit which would not be equipped with walk ways to bring the train into a terminal.

Q When that is the case then the fireman would have to climb from one unit into another without

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the assistance of this walk way?

A No, he would not have to do that at all because he would have no occasion to go back to that unit.

Q Suppose something went wrong with the steam generator -- would it not be his duty?

A There would be no steam generator on it if it is a road switcher. If it is equipped with a steam generator it also has a walk way.

Q You say that that is the general practice, Mr.Emerson?

A Yes.

Q From your own knowledge?

A From my knowledge, yes.

Q I am instructed that there are many units in which the steam generator is on stand-by in road units which have no walk way and are used in passenger service?

A No, my statement does not say that, Mr. Lewis, but I do not think that is right. I do not believe that is correct.

Q Your statement does not show what?

A A unit switcher equipped with walk ways. My information is that the units which are subject to use in passenger service -- that is to say which are equipped with a steam generator or a steam train line -- that they are equipped with walk ways. That is my recollection.

R.A.Emerson

Q That is your recollection of the information you have been given?

A Yes.

Q Now, in the same field, I have here a third bulletin. I have several bulletins, Mr. Emerson, which I wish to draw to your attention. This would be Exhibit 193, sir.

THE CHAIRMAN: Exhibit 193.

EXHIBIT No.193: Bulletin from
Winnipeg, dated December
3, 1956, addressed "To all
concerned".

MR. SINCLAIR: Have you a copy?

MR. LEWIS: No, they were all just given to me either last night or this morning. I apologize to the Commission, sir, but I never saw these before 10.30 last night.

BY MR. LEWIS:

Q This bulletin is addressed to all concerned and it says:

"Diesel units must not be isolated or traction motors cut out either through the use of the isolation switch, traction motor cut out switches, or disconnection of cables on GM units, until it is definitely known that traction motor armatures and wheels are free to turn and that heat and unusual noise is not present in parts affected."

And the other two paragraphs deal with this same subject. Of course you are free to read them,

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if you like, too.

Now, suppose that either the unit which has to be isolated or the traction motors cut out --

MR. SINCLAIR: The witness is reading the balance of the bulletin, Mr. Lewis.

MR. LEWIS: I am sorry.

THE WITNESS: Thank you, I have finished.

BY MR. LEWIS:

Q I would ask you, Mr. Emerson, suppose a unit which has to be isolated or the traction motors which have to be cut out are on a unit which is not the lead unit?

A Yes?

Q Doesn't that bulletin, as late as December 3, 1956, indicate that action was to be taken with regard to the isolation of the unit or the cutting out of a traction motor?

A It indicates that action was to be taken, yes.

Q And that certain precautions were to be followed when such action is taken?

A Yes.

Q Now those precautions, Mr. Emerson, do you know how the person concerned could ascertain whether the wheels are moving freely or whether they are not hot, if I remember correctly, or that there is no unusual noise -- how can that be ascertained except by going to the back unit and looking into the engine and listening to the traction motors from outside?

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- A Well now, you say getting into the engine and listening to the traction motors from the outside. If you get into the engine you are not on the outside. I just want to be clear.
- Q Let us deal just with the outside for a moment. Let us deal with the cat walk and to listening to the traction motors or the noise which the traction motors make. Can you do that from inside or outside the engine on the cat walk?
- A I would think you would do that from the ground.
- Q From the ground?
- A Yes.
- Q You would have to jump off the engine and get on the ground and listen to the sound, is that right?
- A Observe it from the ground.
- Q And if that were done it would be done by the fireman, as of December 3, 1956?
- A Not necessarily. I do not see anything about firemen in this bulletin.
- Q Well, who would have done it, Mr. Emerson?
- A The engineman might do it.
- Q And how can he listen to the traction motors if he is not at the controls moving the engine?
- A Yes. Well, if you will let me refer to this book -- one possible cause of trouble with the traction motor is a loose pinion and in a case where a loose pinion is developed it shows by a continuous wheel slip. The procedure is to

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set the locomotive brakes to hold the wheels from turning, apply power with throttle in notch one, quickly examine each traction motor to determine if one is revolving while the corresponding wheel is stationary and then go back and close the throttle back to idle. Now, that can all be done by the engineman.

Q In that case.

A Yes.

Q I do not quite follow how it can, Mr.Emerson?

A You don't?

Q No. However, I am not going to pursue that for the moment. What I am interested in is that this bulletin refers not only to the traction motors but also to cutting out the engine through the isolation switch.

A Yes.

Q That is, the entire engine?

A Yes, that unit.

Q That unit?

A Yes, that unit.

Q I am instructed that what this bulletin refers to is that when you move a dead unit you must make sure that all the wheels and the traction motor wheels are free, that they are rotating.

A That they will turn.

Q That they are rotating freely.

A Yes.

Q And are you suggesting that the enginner can

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ascertain that while moving the engine at the same time -- at the same time he is moving the engine?

A No. I do not know quite as to that but ascertaining that the wheels are turning, which is really all this involves, would mean moving at slow speed and having someone on the ground to determine that the wheels rotate.

Q As a matter of fact, Mr. Emerson, is it not right to suggest that this bulletin which is dated as recently as December 3, 1956, necessarily implies two people working as a team? Doesn't it imply that if the unit concerned is a back unit?

A Well, I do not know whether it necessarily implies two people. It could be done in some instances, I would think, by the engineman in the cab. He could look out the side window and ascertain it. I am not saying that is the only way it could be done. It might in some circumstances be necessary to have another person on the ground, as I say, to determine if the wheels are rotating.

Q And you have to determine that because if the unit was shut off by the isolating switch the normal light indications of a wheel slip are frustrated and they do not show?

A I think that is right, yes, on that unit.

Q What I am suggesting to you, Mr. Emerson, and this is the last time I will refer to it and I would be glad if you would comment, you have the engineer at the controls and this bulletin implies the engineer at the controls and someone to assist him in isolating the back unit to see to it that the wheels are turning freely on the unit which has been isolated and to inform him as to the situation. Is that necessarily implied in this kind of instruction, Mr. Emerson?

A I do not agree that that way was the only way in which it could be carried out. Another way it could be carried out is for the train to stop, the engineman to idle the unit and then pull ahead slowly and have the trainman watch to see that the wheels rotate. That, after all, is not a very technical determination.

Q I see, then your trainman would do that?

A He could.

Q In my question I did not say the engineman and fireman, I just said it implied that two people would be needed, someone to assist the engineman; that is all I put to you. You would agree with that?

A The word "assist" strikes me as a little strong in this circumstance.

Q Pick a word, Mr. Emerson; I am generous. You pick a word you like. Someone with the

engineman?

A Someone in conjunction with him.

Q Yes?

A All right.

Q As that implies, the engineman is not alone, but someone in conjunction with him?

A I may say that the instance to which you refer, this type of thing is very infrequent.

Q That is your statement?

A It is.

Q You told us that the failure to make transition is infrequent and this instance of having to isolate a unit for wheel inspection is infrequent?

A Yes, for this type of thing.

Q Whether two infrequencies make a frequency remains to be seen?

A I will state they both do not make a frequency.

BY THE CHAIRMAN:

Q Exhibit 193 says that diesel units must not be isolated or traction motors cut out. Under what circumstances would that become necessary or advisable?

A May I see the bulletin again, sir?

Yes, that is in case, for example, of continuous wheel slip relay, as I understand it, may indicate a sliding wheel, and in this case you would not cut out the traction motor on the corresponding pair of wheels or truck until it has been determined that the wheels are not

sliding but are rotating.

Q Is there anything else but wheel slip to which that refers?

A Well, not that I am aware of, sir.

BY MR. LEWIS:

Q Some unusual noise that might make the engineer suspicious, even though he has not had a wheel slip indication?

A It is possible.

Q Suppose you had one of the protective devices, one of the alarms come from a protective device which required the shutting down of the engine concerned? It would apply in that case, too?

A Shutting down of the unit concerned?

Q Yes?

A No, not necessarily.

Q You mean you could shut it down without ascertaining whether the wheels are rotating freely?

A Quite.

Q Is that bulletin -- I suggest to you that bulletin is not limited merely to wheel slip? As a matter of fact, if I may have it, as I recall it, it specifically warns the engine crew that if you isolate a unit without ascertaining about the free rotation of wheels you will get into trouble because in the isolation of the unit all wheel slip indication of the unit is lost; no warning would be received in the cab if any of the wheels were locked.. A constant

check to ensure wheels are turning is required when operating with the unit isolated or motor cut out. That, I suggest to you, indicates to me that your mechanical officers had in mind the isolation of a unit for any reason?

A Well, I think perhaps that this is a subject on which certainly I should get a little more information before I deal with that question, Mr. Lewis.

Q If you had said "we" I would agree with you.

BY THE CHAIRMAN:

Q If the engineer had no one -- perhaps this is a remote possibility -- if the engineer had no one to assist him while he is checking to see that the wheels or whatever that document says should be free, then he would have to rely on what he could see out the window or else call for help?

A Either one or the other. If, as you say, there was no one available who could make these observations in conjunction with him.

BY MR. LEWIS:

Q When you say, look out of the window, he could only look out one side, the window on one side?

A Yes, but of course the wheels on the axle are solidly attached, so if the wheel on the right side is turning, the wheel on the left side is also turning.

Q Yes, that is unanswerable.

THE CHAIRMAN: Even you and I can understand that.

MR. LEWIS: Certainly, that is one of the easiest things I have found to explain in this case. So easy, I am ashamed it did not occur to me.

BY MR. LEWIS:

Q In one exhibit filed by Mr. Hooley, Mr. Emerson -- I am still concerned with this patrolling and the assistance of the engineer's helper -- in one of the exhibits filed by Mr. Hooley, the exhibit of his trip record, Exhibit 173 -- I do not know that the witness will require it, actually, for the question -- he tells of an experience where the filters were removed. It is on page 2 of that Exhibit 173. One filter on one side was removed and then the other filter on the other side. Now, I am instructed, Mr. Emerson, that if the trouble with the unit was due to the clogging of one or both of the filters, that could not possibly be ascertained with the engine standing. If you stop the engine and you want to look for your trouble, the trouble in the filter could not possibly show up while the engine is standing?

A No, I do not think I would agree with that. As I understand this case, what happened was that the engine starved for lack of fuel -- I forget whether it shut down or went back to idle, but it was hunting anyway. I recall that. Then, it was a question of taking action on this particular unit. The action taken, changing a filter, was relatively not too complex, but

frankly, from the information given, I doubt that this was a case of a clogged filter at all.

Q Well, assume it was. Apparently they thought it was?

A They thought it was and I am sure they acted in their best judgment.

Q Assuming for the moment that it was, what I am putting to you is that I am instructed that the defect would not show up when the engine was standing. It would only show up because of your loss of power?

A Yes.

Q Would only show up while the engine was in motion and for that purpose someone would have to go back and look at the filter?

A No, I do not think I could agree to that. The presence of that type of difficulty could be readily ascertained while the engine is standing by simply cutting out, I think, the generator field switch and then operating the throttle for that particular unit. If it did not respond to its throttle, that would definitely pinpoint the trouble probably as the fuel shortage in that unit. That could be done while the unit is standing.

Q Let me put this to you with a great deal of trepidation. Surely, when you are standing you can have a response to your throttle for that unit without the supply of fuel being adequate to give you power in motion?

A No, I would think it is just like your automobile in that respect, Mr. Lewis. If you have a frozen line to the carburetor in cold weather, you can stand and press your foot on the accelerator and the engine won't turn over in response to the throttle. It is the same type of thing.

Q With great respect, I am going to suggest to you it is not. You have given me an analogy with which I have had some experience. If your automobile fuel line is somewhat clogged, you have had the experience as I have had, you find you can start it, then you get going and she stalls on you?

A Or you get the same thing, you can start it and without putting it in gear, you can put your foot on the accelerator and after a few seconds, when it exhausts the supply of fuel in the carburetor the engine will sputter and idle, if it does not shut down.

Q I had hoped you would agree with this, but let me put it to you one more way. According to the Exhibit this is the first time that the filter was removed and it was only a few miles out of Revelstoke, if I remember correctly?

A I think that is right.

Q Let us assume for the moment that the unit was inspected at Revelstoke by your very excellent maintenance staff?

A Yes.

Q Then, it must be assumed that it had not shown up a few miles earlier when at Revelstoke?

A I do not think that is necessary, but assuming -- I assume that the difficulty had not developed with this unit on its previous trip into Revelstoke because I assume that if it had developed it would have been so recorded on MP-74 by the engineman concerned. The test by the shop staff at Revelstoke would not necessarily mean a check of the engine under load under those circumstances, and therefore what took place would not be disclosed. They may have changed the filter. I do not know whether Mr. Hooley said that or not.

MR. SINCLAIR: As a matter of fact, Mr. Hooley said that. I think my friend should have read the evidence rather than rely on the witness' memory. Mr. Hooley said they had put new filters in; that is a fact, they had put new filters in at Revelstoke.

THE CHAIRMAN: We have that now.

THE WITNESS: I suspect when the filter was put in, the first filter that was changed I think Mr. Hooley explained was on the suction side of the fuel pump and that the seal on the cover was not made perfectly tight and there was a little air lock, and that resulted in the lack of supply of fuel to the unit rather than the clogging of the filter.

BY MR. LEWIS:

Q To go on to the next. You disagree that it is necessary to have a unit in motion in order to ascertain whether a filter could function or not?

A Yes, I disagree with that.

Q Another point which has been drawn to my attention and on which I would like your comment is this: I am instructed that it occasionally happens that the air compressor fails to load or to unload and that when that happens it is now the practice for the engineer to send the fireman or helper back to work the air compressor manually and get it loading, if it is not loading and should be, or get it to unload, if it is not unloading and should be?

BY THE CHAIRMAN:

Q What is the function of the air compressor?

A That is to supply compressed air to the air-brake system and for certain auxiliary purposes on the locomotives themselves.

BY MR. LEWIS:

Q It is located on or in the engine?

A On each unit, yes. First of all, in the case of an air compressor failing to unload. That is relatively

inconsequential I think because there is a safety top on the air reservoir which would simply dissipate the excess air if produced.

If the air compressor failed to load, again it would not be a matter of serious consequence because the main reservoir of air between units operated in multiple is the train line so that the air compressors on the other units will still continue to supply air.

Q Therefore you do not think there is any time a necessity for worrying about it before you get to the next stop?

A No, I think not.

Q I just wanted to understand what that was. Another point which has been drawn to my attention and which I am sure you know a great deal about, more than I do, is that on occasion, so I am instructed, the reverse current relay -- I hope you can say what that is when you are asked because I would not attempt to describe what I have been told about it -- it gets stuck on occasion and it affects the battery, the battery will discharge rather than charge when that happens?

A Run the battery down.

Q Run the battery down?

A Well, I cannot say. It is I suppose

possible as there are many things in the realm of possibility. I can say that that condition has not been a source of trouble in our operations which causes me any concern.

Q Is it possible that the reason you have not even had it drawn to your attention is the instruction which I have received and on which I would like your comment, that if the reverse current relay lever or finger does get stuck the helper now just goes out and flips it up -- those were the words used to me -- and 999 times out of a thousand it becomes unstuck and the battery starts charging again?

A No, I would not accept that suggestion, Mr. Lewis.

Q You would not?

A No.

BY THE CHAIRMAN:

Q What is the purpose of the battery?

A The battery on the unit is again like the battery on your automobile, it supplies current for starting and when the unit is standing, for lights and that sort of thing.

Q There is one on each unit?

A Yes, sir.

Q When there are multiple units are they

all in one circuit?

- A The battery circuit connected in multiple?
I am not certain as to that. I think they must be, but I am not certain.

BY MR. LEWIS:

- Q One final point on these instances. I am instructed that you have re-watering stations, as it were, for these diesel units, and some of them are indicated in the time cards I notice.
- A What points do you refer to?
- Q Where you can get water?
- A Water for what purpose?
- Q For the diesel unit. You tell me, I don't know.
- A For the steam generator?
- Q I am not talking about the steam generator, I am talking about the cooling water in the diesel.
- A Well, you never add cooling water to a diesel on a run except in the case of an emergency.
- Q What do you mean an emergency?
- A Well, some unforeseen or very rare circumstance, I would say, in which the supply of cooling water in the radiator, in the cooling system of the engine was depleted.
- Q It is very rare when it is depleted?
- A That is right.

Q But it does happen?

A Again it is within the realm of possibility, but as I say most infrequent.

Q For example -- I do not think it is necessary for me to follow this through -- in Timetable 109, which happens to be the one I have, which is a Canadian Pacific Railway, Pacific Region Timetable, there is a footnote indicating an emergency diesel water station at Tappen. What would that refer to?

A That would refer to the passenger service.

Q For steam generators?

A Yes.

Q Not for any other purpose?

A Again in the extremely rare and unlikely instance that the water supply in the cooling system was depleted, they might use it, but that is not the prime purpose of these water stations. They are to replenish the supply of water in the passenger units, and here I am talking not about the cooling water but about water for the steam generator to supply heat to the train behind, and that is provided at certain prescribed points.

BY HON. MR. McLAURIN:

Q The steam boiler?

A Yes.

Q The generator does the heating and the boiler --

A The steam generator is the boiler.

Q Oh, it is?

A Yes, sir. We water these units at prescribed points. Sometimes there is a misadventure and some occurrence takes place and a train is delayed. If it stands too long, if it is delayed too long, particularly in severe weather, the supply of water in the locomotive unit eventually becomes depleted. For the purpose of replenishing that supply there are these emergency water stations, as they are so described, established at different points where the supply can be added to and heat continued to the train.

BY MR. LEWIS:

Q I referred to Tappen, which is in the Shuswap subdivision. I understand there is provision for emergency water stations in other subdivisions, such as the Mountain subdivision and so on, and those emergency water stations could be used for replenishing any water lost from a diesel unit?

A You mean in the cooling system?

Q Yes.

A I suppose it could, yes, but certainly we would not like to use it. In an

emergency it might be used, but in an emergency you might get pails and put water into it.

Q Can you tell when the water in the cooling system of a diesel unit is low without looking at it while the unit is in motion?

A No. As I understand it, the gauge or water indicator on those units shows a different level in some instances when running and when shut down, but in that respect again, Mr. Lewis, it is very much like the engine in your automobile. I wonder how often most of us add water to the radiators in our automobiles.

Q Do not ask me because mine is rather old.

A So is mine, but at the same time I very rarely have to have the water replenished.

Q Now if I may turn to these mechanical examinations. You say they have been withdrawn for revision?

A Yes.

Q Am I right in suggesting to you that you started to withdraw them for revision only this year?

A I think it was this year, yes; I believe it was about February.

Q Am I right in believing that up until that time the examinations for firemen were based on the mechanical examinations,

of which Exhibit 147 is a part?

A I understand that that was not universal across the country.

Q What were the variations in the practice?

A I do not know that I have all this run down, but apparently in Western Canada, at least parts of Western Canada this examination form was not used.

Q What parts of Western Canada?

A I do not know whether I can pin it down any closer than that, Mr. Lewis.

Q I have some bulletins relating to that which came to my attention last evening, also from Winnipeg. The first, which I should like to file as Exhibit 194, is Bulletin No. 29, date-lined Winnipeg, Manitoba, April 12, 1956. It is addressed to "All Firemen and Diesel Helpers," you will notice, and presumably was issued by Mr. B. B. Woodland, Division Master Mechanic, according to the typed name at the bottom. Perhaps I should have put this to Mr. Woodland, but I did not have this when he was giving evidence. This reads:

"Commencing April 16th, complete sets of operating examinations covering diesel, electric and steam locomotives will be available for distribution to firemen and diesel

"helpers. These may be obtained in Room 328 CPR Depot and each fireman must sign for his individual copy. These examinations covering steam and diesel locomotives will comprise the material upon which progressive mechanical examinations are based in all future promotions and it is expected that the first oral and written examinations will be conducted in September."

Then the next paragraph indicates that they should obtain them as soon as possible?

A Yes.

MR. LEWIS: Then perhaps I could file as Exhibit 194, if you would permit me, another bulletin. The two are connected. This bulletin is dated April 27, 1956, and is presumably issued by R. MacDonald, Locomotive Foreman.

THE CHAIRMAN: At Winnipeg?

MR. LEWIS: At Winnipeg, yes, sir. It is addressed "To All Concerned." The earlier one was addressed to "All Firemen and Diesel Helpers," but this is addressed "To All Concerned." It reads:

"Further to bulletin of April 12th. The following firemen will now please pick up booklet

"'Mechanical Examination' at my
office."

A Yes.

EXHIBIT No. 194 -- Bulletin,
April 12, 1956.

EXHIBIT No. 194A-- Bulletin,
April 27, 1956.

BY MR. LEWIS:

Q Therefore as early as April of last year
these mechanical examination books, of
which Exhibit 147 is a part, were being
distributed to firemen in Winnipeg, is
that not right?

A Yes, I think that is clear. I should
point out that the first bulletin of
April 12, 1956, which is Exhibit 194,
refers to operating examinations. That
is an error there, it is really mechan-
ical examinations, as appears in the
later bulletin.

I must point out to you that these
examinations were made available to fire-
men for the purpose of enabling them to
qualify themselves for promotion to
enginemen.

Q I appreciate that, Mr. Emerson, but they
would be progressive mechanical examin-
ations?

A Yes.

Q Would they not?

A I would take it they are.

Q You would have the first one, if I remember correctly, within six months after the first year's service?

A I think that is right.

Q And the second one within six months after two years' service and the third one within six months after three years' service?

A Yes.

Q That was the general program or plan, is that not right?

A I think the provision there is rather in accordance with the provisions of the schedule. I believe they make reference to this. The purpose of this is not that firemen are promoted to enginemen at these intervals, but rather that on entering the service they are given an opportunity at reasonably short times to prove that they can qualify for promotion to engineman rather than waiting twenty years and then finding out at that time that they are not qualified.

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THE CHAIRMAN: That is the schedule you refer to?

MR. LEWIS: The collective labour agreement is what the witness has in mind.

MR. SINCLAIR: I think it is not in the agreement. I think it was an understanding that was reached with the organization rather than being incorporated in the actual wording. It was based on an understanding.

MR. LEWIS: I do not think it is in the schedule at all, but I think my learned friend is wrong. I did not bring my copy. I think these intervals are set out on some prefatory page of the mechanical examination book.

THE WITNESS: Oh, yes.

MR. SINCLAIR: That is correct, and that is based on an understanding, I think, with the organization and following discussions and representations by them that it was unfair to let a man stay on as a fireman for some years and then find that he could not meet the mechanical qualifications. It was felt that if he was going to get that bad news he should get it early.

MR. LEWIS: I have no quarrel with that.

BY MR. LEWIS:

Q As a matter of fact there have been instances, I understand -- correct me if you know better -- where if the fireman could not pass his third

year examination he has been let go?

A There may have been. I cannot say one way or the other.

Q Now, these mechanical examination booklets which we have now established were distributed in Winnipeg as late as April of last year, they contain, do they not, as Exhibit 147 shows, information for the fireman which he has to learn about the diesel after his first year of service and while he is still a fireman and is going to continue to be a fireman for some time? Is that not right?

A They contain -- this Exhibit 147 the fireman takes after one year's service, as you say, and as I explained yesterday, in the preparation of this examination form our mechanical officers included general information about the operation of the diesel locomotive as such for his education, again bearing in mind his eventual promotion to engineman.

Q And this is the kind of thing that has been happening. I may be wrong but I think the Commission should have a little more information on it. If you look at the first page of the actual questions and answers in Exhibit 147, this form 505 was revised and issued apparently in October of 1955?

THE CHAIRMAN: November, is it not?

MR. SINCLAIR: 505 is the second part of it starting after the yellow sheet and the index.

It is on the first page, October, 1955.

THE CHAIRMAN: October is right.

MR. LEWIS: The November part is some general information. It is October, 1955.

BY MR. LEWIS:

Q On the first page you have question 2:

"What routine inspection is required during each trip?"

Then the first part of the answer is:

"Such periodic examination of gauges and appliances as is prescribed for the subdivision on which the locomotive is operating, and the reporting of the necessary readings."

I assume that refers to Exhibit 130, does it, that we have looked at before?

A 130 being form MP-604.

Q Yes?

A Yes, I think that might be.

Q That would have been in force in October, 1955?

A There was at least provision for requiring a fireman to take certain readings under some circumstances.

THE CHAIRMAN: Of course, Exhibit 130 applied only to Alco and M.L.W. units.

MR. LEWIS: Yes, sir, that applied to certain units, to the Alco units.

BY MR. LEWIS:

Q Of course, this would apply to all, the question

and answer on page 1 of 505?

A Yes, subject to such periodic examination as is prescribed for the subdivision on which the locomotive is operating.

Q And the reporting of the necessary readings?

A Yes, in conjunction therewith.

Q I have not studied Exhibit 130 and I do not know whether it would make me any wiser if I did, but from a quick glance at it some of these readings could only be taken when the engine is in motion? Would that be right?

A That is so.

Q And so "reporting of the necessary readings" implied, did it not, as late as October, 1955, in your mechanical examination for the helper after one year of service, that he had to make some kind of inspection while the engine was in motion and to report the readings which he saw? Is that not right?

A Well, I don't think I could go quite that far with you there. Form MP-505 here, Exhibit 147, certainly left the door open, let me put it that way, for the periodic examination of gauges and appliances if such was found necessary in any particular area.

BY THE CHAIRMAN:

Q If prescribed?

A If prescribed, but I do not think you can carry it to the step that that therefore automatically means that form MP-604,

Exhibit 130, was tied into it and was in use at that time.

BY MR. LEWIS:

Q Well, Mr. Emerson, since you made no mention in any bulletin about the duty of the helper being to do certain things only on the direction of the engineer until October, 1956, pages 6 and 10 of Exhibit 7, and since patrolling was done before that month, do you really not think that it is a legitimate conclusion that the helper reading question and answer No. 2 on form 505 would assume that he was expected to inspect the unit in motion and to report on it? Do you really not think that is so?

A If it was prescribed --

Q Yes?

A If it was prescribed in a particular area he would infer that it was something he was going to have to do, yes.

(2) Q And these mechanical examinations, form 505 revised and issued in October, 1955, were distributed in Winnipeg to people as late as April, 1956, as we have established by Exhibits 194 and 194-A? Is that not right?

A Apparently, assuming, and I cannot check this, that the form MP-505 was included in the mechanical examinations referred to in the bulletins, assuming that is so, but again I want to say that the provision in here left the door open, if you will, to periodic

examination of gauges and appliances being required if and when but it did not say they had to make them.

Q In view of your very admirable legal training, Mr. Emerson, I am going to go out of the order in the exhibits which I was going to file and I will file as Exhibit 195, Mr. Chairman, a bulletin from Winnipeg dated March 7, 1957, bulletin No. 24.

EXHIBIT NO. 195 -- Bulletin No. 24 dated March 7, 1957, issued at Winnipeg.

BY MR. LEWIS:

Q This bulletin reads:

"Request has been made to return all copies of mechanical examinations contained in forms MP-500, 505, 510, 515 --"

Then there are a number of other numbers.

"Please return all books immediately for revision. All books are to be returned to the general locomotive foreman. This will advise that these forms have now been superseded and are no longer in effect."

This makes it pretty clear, does it not, that this man expected the firemen and diesel helpers to have form 505?

A That some of them may have had it.

Q Well, I still admire your legal training, sir.

A Thank you, but I take no bow for that.

Q Mr. Emerson, all these forms -- perhaps there should be a limit to this -- are put in that mechanical examination book with the red covers as a rule? Is that not right?

A That makes the complete set.

Q And if you look at that set which you have got in your hands now that contains form 505?

A It certainly does.

Q Have you ever seen a set which does not contain that form?

A That is the only set I have seen.

Q You have never seen any others?

A No, I do not examine more than one set. If I have a set which is a complete set that is all I require for my purposes.

Q You have never looked at another one?

A No, I don't think I have ever.

Q Has anyone ever told you of a set which did not contain 505?

A I am not certain of that. No, I do not think so, but after all you are getting into the detail of the handling of this thing out in Winnipeg and our bulletin books out there seem to have been pretty well emasculated. Where I cannot say. They may have been.

Q And if you were not answering questions to me in cross-examination and anyone told you that they were being given the mechanical examination books, would you or would you not

assume that they would get all the forms for the progressive examination?

A Well, there is a difference in answering questions in cross-examination naturally than in dealing with our mechanical officers.

Q I am asking you if you saw a bulletin that they were to obtain the mechanical examinations you would not assume that they would get all the forms included in the progressive mechanical examination?

A Let me put it this way. If they told me that the forms were being distributed, that the book was being distributed and they did not tell me, speaking to me, that the book was complete or qualified I would have been misled, yes.

Q You would assume that it was complete?

A In their dealings with me.

Q And if that bulletin --

A Oh well, that is something else.

Q If you saw that bulletin, Mr. Emerson, for the first time, not handed to you by counsel in cross-examination but you saw it as an officer of the C.P.R. and the bulletin said, "Please come and get the mechanical examinations for the progressive examination", without any qualification, would you not assume that it would contain form 505 as well as the other forms?

A No, I don't think I would make that assumption,

Q You would not?

A No, that it contained the complete set, certainly not.

Q Well, Mr. Emerson, is 505 not the only examination, except for the general questions, which the helper after his first year of service writes?

A After the first year he writes apparently three sets -- I am sorry, you are speaking now of diesels only, diesel service.

Q Yes?

A I see, excluding steam.

Q Yes. There is a special steam book.

A Excluding steam, there are two sets.

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Q And 505 is the set which he writes regarding diesels, isn't that right?

A That is the examination which he would take according to this, yes.

Q And therefore if the bulletins talked about ... the progressive examinations, first year, second year, third year -- the mechanical examination book had to contain 505?

A If they followed the procedure strictly as laid down, yes. My information is that that procedure is not followed in all cases. Now, I do not know whether I can give you the details of it but there were evidently some quite wide variations.

Q Is there another mechanical examination or another form relating to mechanics which helpers write after the first year of service other than 505 with regard to diesels?

A No, not that I am aware of, Mr.Lewis.

BY THE CHAIRMAN:

Q Could you put it this way? So far as the system is concerned it is 505 which was expected to be written?

A That was the prescribed form, sir, there is no question about that; but as I say, there was not uniformity across the system in its use.

Q In so far as there was not uniformity, you would not be carrying out the system's instructions?

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A You are quite right.

MR. LEWIS: It is now a little after
12.30 and perhaps we should adjourn.

THE CHAIRMAN: Yes.

--- The Commission adjourned at 12.05 until 2.00 p.m.

Wednesday,
May 8, 1957

AFTERNOON SESSION

-- The Commission resumed at 2.00 p.m.

R.A.EMERSON, Recalled

BY MR. LEWIS:

Q By the way, Mr. Emerson, some little while ago today I referred to cooling water becoming low and you waved it away as being most unlikely. By sheer accident -- because I had not had time before -- I noticed in your evidence of yesterday at pages 4448 and 4449 of the transcript, volume 32 for May 7, 1957, you were giving an example of a shortage of fuel developing and how that would be remedied and you were asked the following question by Mr. Justice Martineau: "Has the engineman got a gauge inside to tell him if there is enough fuel?"

Your answer is: "No, the gauge I think is on the tanks in all instances. That is my recollection. However, it would only be some most unusual circumstance which would cause the engine to require fuel at other than a regular point."

Then you go on to say: "Perhaps a better example would be water -- cooling water. If for some reason an engine ran short of cooling water -- let us say the radiator shutters stuck and caused the engine to overheat and boiled away some of the water, then the engineman would

wire ahead that at Ignace they would require additional water."

That suggested to me, when I saw it, that for the cooling water to go low was not in your mind yesterday as unusual a circumstance as I got the impression you suggested it was this morning.

A No, I do not think that was the intention, Mr. Lewis. The thought in my mind there was that readily I could think of no instance in which a unit did run short of fuel between its servicing points and the reason I moved on to the example of cooling water was because a shortage of cooling water could conceivably develop from exterior causes such as the one I mentioned.

Q Yes?

A But it was not an attempt to suggest that shortages of cooling water occurred frequently or anything like that. It is a very infrequent occurrence.

Q Now, to continue with the examinations which we were discussing toward the end of the morning, I would like, Mr.Chairman, as Exhibit 196, to file another bulletin.

MR. SINCLAIR: I wonder if these are actual bulletins, Mr. Lewis, are they? I wonder if these are actual bulletins ripped off the bulletin boards by one of the firemen?

MR. LEWIS: They are actual bulletins. I

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cannot tell my friend any further as to how they were obtained, but they are actual bulletins.

MR. SINCLAIR: This might explain some of the difficulty I have had in meeting some of your requests.

MR. LEWIS: I have no idea where they came from. I do not know anything about the difficulties my friend has had nor do I know what can explain them but these are actual bulletins.

MR. SINCLAIR: I wish my learned friend would tell his clients that if they want copies of bulletins -- if, for instance, they will say they want a bulletin; I noticed one that was dated May 7, 1957 -- that rather than tear them down off the bulletin board they would just make copies because some of these are still operative and may affect operations. Some of these bulletins are old and out of date and are not important as far as day to day operations are concerned. I just wondered if they would communicate their desire to have copies of the bulletins rather than to remove them. I realize that they are attempting to put in my friend's hands something that will not have to be proved but I will be satisfied if he will file an exact copy.

MR. LEWIS: I assure my learned friend that if I had known of the existence of these bulletins and that they were on the bulletin boards or in bulletin books they would not have

been presented in this way to this Commission and I would have asked for them as I have for other matters.

MR. SINCLAIR: The old ones do not matter. That is all I am saying. I do not think we have to be that technical. If my friend says this is an exact copy and hands it to me, subject to check we can accept that, I think, Mr.Chairman, as proof, rather than the originals.

THE CHAIRMAN: I suppose we can accept all of these in the meantime and you will have an opportunity to look them over, Mr.Sinclair, and if you find anything --

MR. SINCLAIR: It is just that they look like original documents, Mr.Chairman, and all I am saying is that if they have been ripped out of bulletin books or off bulletin boards and are still operative -- you see, we will not know that they are ripped out.

THE CHAIRMAN: They might interfere with day to day operations now?

MR. SINCLAIR: That is right, sir.

MR. LEWIS: And, Mr.Chairman, I do not mind adding that the records of the company should be complete. I want to assure my learned friend that I am sure this was not done, I am sure he knows that, on my instructions. It would have been done differently if I had known of their existence.

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THE CHAIRMAN: It might assist Mr.Sinclair in connection with the latest bulletins if you could draw the attention of your clients, Mr. Lewis, as to exactly where the bulletins came from so that they could be replaced.

MR. SINCLAIR: The old ones do not matter at all.

MR. LEWIS: I would be glad to do so, Mr.Chairman.

MR. CHAIRMAN: You were introducing an exhibit, Mr. Lewis?

MR. LEWIS: This is Exhibit 196, a bulletin from Winnipeg, dated August 31, 1956.

EXHIBIT NO.196:Bulletin from Winnipeg,
dated August 31, 1956.
Bulletin No.70 in the Winnipeg
Terminal Division; Bulletin
No.265 in the Portage Division.

THE CHAIRMAN: The date again?

MR. LEWIS: August 31, 1956.

BY MR. LEWIS:

Q This is bulletin No.70 in the Winnipeg Terminal Division and bulletinNo.265 in the Portage Division apparently. Would that be right?

A That is correct.

Q And it simply reads:

"It is to be noted that commencing October 1st, examinations will be held on the first progressive mechanical examination and also the second progressive mechanical

examination, and that all firemen up to and including No.298, -- "

Perhaps I could interrupt at this point.

Would that be an employee number?

A I would think that would be the number on the seniority list.

Q The bulletin continues:

"-- will also be required to write a third examination and receive oral for promotion to engineman."

My question is, would you not agree, Mr. Emerson, that the reference to the first progressive mechanical examination, in so far as it refers to the diesel mechanical examination would be form 505?

A Yes, I think that might well be.

Q Form 505 being Exhibit 147, Mr.Chairman.

And then, Mr. Emerson, you dealt yesterday with the training which firemen receive and you made clear, as my memory goes and as I have taken a quick glance at the transcript, that the fireman gets these mechanical examinations on his road to becoming an engineer, and you said that that was the only purpose of these examinations, is that right?

A Yes, that is the purpose of the examinations.

Q My memory is -- I have not yet been able to locate it and you must correct me if I am wrong because I am anxious not to be unfair --

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but my memory is that as far as diesel training for the fireman is concerned, you suggested that that was limited to the steam generator?

A In so far as the training given to firemen as firemen, yes, it is limited to the steam generator. That is exclusive, of course, of the question of compliance with the Uniform Code of Operating Rules, Exhibit 27.

Q Yes?

A But dealing with the diesel engine as such, yes.

Q But how can you divide that? That is given to him qua fireman and some other training is given to him qua apprentice engineer. How do you divide it?

A I think it is quite clear. As a fireman he is responsible in passenger service for attending to the steam generator and is expected to deal with it. As to the other functions which he might perform on the engine he deals with those not as a fireman but under the instructions of the engineman. In other words, they are the engineman's responsibility.

Q But the person designated fireman (helper) is the person who does those things?

A When he does those things he does so by delegation, let us put it that way, from the engineman.

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Q And in order to be able to do that by delegation from the engineman, accepting your words for the moment, when he does it by delegation from the engineman he has to know what he is doing. He has to receive some instruction in order to be able to know what to do when the engineman delegates him to do these things?

A Well, it may be on the job training, as it were, in the sense that the engineman will instruct him precisely what to do and of course over the course of time they naturally pick up information and I suppose that after an engineman has sent a fireman back to reset a ground relay three or four times the fireman, the next time he goes back to reset the ground relay, does not have to be told where to look for it and all the rest of it.

Q Does that answer, Mr.Emerson, mean that you are suggesting that your road foreman of engines and the people who instructed the engineers in the diesel engine operation did not give any instruction to the firemen and that the firemen picked it up only from the engineer? Is that what you are suggesting?

A No, I am not quite suggesting that. I think, as I pointed out yesterday, that our road foremen of engines and other mechanical officers travelling on the road with diesel units

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were quite ready to explain the functioning of the units to firemen and to educate them, answer their questions and anything of that sort that they might exhibit an interest in.

Q Yes, and would I not be right in thinking that you, as the chief operating officer, would have two or three years ago, before this issue arose, would have expected your road foreman to make sure that any fireman who showed the slightest interest became acquainted with all the elements he could be taught; wouldn't you have expected that?

A Yes, I think that would be reasonable, to give him every opportunity to acquaint him with the functions of the device, yes.

Q And I suggest to you, Mr. Emerson, that leaving the last period of controversy out of consideration, for two reasons, first because Exhibit 129, 129A and 130, one or the other was still in use, and secondly, on his road to becoming qualified for an engineer; would not that be correct?

A I think I would take the second part but not the first.

Q Would you not expect him to know something so he could make the readings and record them on your 130 or the third sheet of Exhibit 129A and 129?

A Well, 129, to turn to it, was dated June 1, 1949, and was superseded later that same year, so it certainly disappeared something over almost eight years ago. 129A was dated December 12, 1949, and was superseded in turn by Exhibit 130 which was issued on April 6,

1951, and again applied only to Alco and MLW road units, so I have difficulty in accepting your suggestion in respect to the last two or three years, I think you put it.

Q I take it that until October, 1956, Exhibit 130 was available -- I am not suggesting to you it was in use in every case, but was available and you would expect it to be used at least in some cases; for that purpose the fireman has to have some knowledge of what he was looking at, is that not so?

A I would think it would be very elementary knowledge he would require to have to read something like a lubricating oil pressures; that is pretty elementary.

Q In his very first year as a fireman he would have to write form 505, to learn the questions and the answers and so on, in that first year of the progressive mechanical examination, would he not?

A He would have to write it.

Q He would have to write it after one year and therefore learn what it is about, would he not?

A Yes, that was the basis on which the form was set up.

Q And that was in force until the end of last year?

A It was withdrawn in February of this year.

Q It may or may not make any difference to our

dispute, Mr. Emerson, but is it not a fact that until the end of last year all those who were employed by your railway as firemen were expected to learn as much about diesel engines and were given an opportunity to learn as much about diesel engines as the engineer did?

A No, that is not a fact.

Q Then, what is the fact?

A When you say they were expected, the answer is definitely no. When you say they were given the opportunity, yes, they were given an opportunity. Again, as to the question of MP-505, Exhibit 147, I must point out that that was a part of the step on his way to qualification in becoming an engineman.

Q Yes, and you expected him, therefore, to learn that part which was covered by MP-505 during the first year of service?

A He would learn it, I think, yes.

BY THE CHAIRMAN:

Q No, the question is did you expect him to?

A Well, I think in the preparation of form MP-505 it is hard to draw a line on this, but I am quite satisfied on examining it in my own mind again, much of the information given in it was purely for the purpose of giving a man an insight into the operation of the diesel, as information, not with respect to his duties as fireman but looking forward to his eventual promotion to engineman.

Q Yes, but the question is, regardless of this purpose, did you expect him to learn that information?

A When he wrote the examination I think the answer to that would be yes, because of the understanding we outlined this morning between the organizations and the company, the series of examinations was set up and these time schedules provided that it would result in the weeding out of the ranks of firemen a man who could not qualify and become an engineman before he had acquired too much seniority and, in other words, reached a dead end.

BY MR. LEWIS:

Q But you must have expected them to learn the information which they had to have in order to write their first year mechanical?

A That they would learn the information, yes, again I think that is right.

Q Then again, you expected them, did you not, to learn for whatever the purpose, and I will accept your purpose for the moment, to learn what they had to learn for the second year mechanical? I have not received instructions on this, but from looking at the book it would appear to be form MP-510?

A The second series?

Q Yes?

A No, I make the second series MP-325.

THE CHAIRMAN: Is that book in?

MR. LEWIS: I think I put in one copy but it may have been withdrawn.

MR. SINCLAIR: What my friend is speaking of is all on the second page. It says what is in the first series, the second series and the third series, on the second page. There is no need for any guess work. It is right there.

THE CHAIRMAN: Right there where?

MR. SINCLAIR: On the second page.

THE CHAIRMAN: Is it on Exhibit 147?

MR. SINCLAIR: Yes, the second page of the white sheets.

THE CHAIRMAN: Then, when you get past the yellow sheets you have a general examination for helpers and that goes right through from question 1 to question 30 of the series, is that it?

MR. SINCLAIR: It says that the first series is a series consisting of three sets of forms, MP-325; MP-505 and MP-540, and that is the examination on steam generators. When this exhibit was put in, it was suggested we only put in the two items that were referred to, MP-505 and the general material showing what was required in each series. That is what is shown here.

MR. LEWIS: I agree with my friend. I had forgotten it was on page 2.

BY MR. LEWIS:

Q On the third series, by the time he has been in your service three years, you expect him to write MP-500, which is the general

mechanical examination for enginemen on diesel-electric locomotives; then MP-510, which has an asterisk, Mr. Emerson, and perhaps you could explain that, what the footnote means?

A Yes, the footnote reads: "Superintendent of Motive Power and Car Department option". That is the interpretation of the footnote. The reason for it is that that examination would be given only on territories where those types of units were in use. In other words, they would take one or the other of MP-510; MP-515; MP-520 or MP-525, depending on the class of unit in use in their territory.

BY THE CHAIRMAN:

Q Did a man get some kind of certificate or diploma when he passed each series?

A Yes, I think he did -- at least he was advised of it. I do not recall seeing it, but he was informed of it, anyway.

Q When he came to write or did write each one of these series, he could not get his pass standing without writing and without knowing all the required information?

A Oh, no.

BY MR. LEWIS:

Q As a matter of fact, Mr. Emerson, is it not true that in addition to these mechanical examinations dealing with diesel engines and the steam engine, it is clear from Exhibit 147

that in addition to that the fireman on his road to becoming an engineman, as you put it, would have to learn about the air brake system?

A Well, yes, the air brake systems. There are examinations in this series on the air brake systems.

Q And the first air brake examination of which, according to page 2 of Exhibit 147, a fireman would take would be after his second year of service, assuming he passed his first series?

A Of course.

Q It is in his second series that there is MP-530 on certain air brake examinations?

A Yes.

BY THE CHAIRMAN:

Q Are those air brakes on diesel locomotives or on trains or where?

A This is an examination, sir, on the different types of air brake equipment on the locomotive -- it is primarily on the brake valve and the functioning of the brake system of a locomotive.

Q Steam or diesel?

A Yes, it could be steam or diesel, depending on the type.

BY MR. LEWIS:

Q Then, there is a second air brake examination which he takes in the third series, MP-531?

A That is right.

Q And for that purpose, Mr. Emerson, I think

we have already had evidence on this point, I am not sure, but for that purpose the fireman as well as the engineman and sometimes others are invited into an instruction car or have been in the past?

A Yes.

Q Both for diesel engines and for air brake instructions?

A I think so. We have certainly had one instruction car operating on diesels across the system, yes.

Q Now then, with the result -- am I right, Mr. Emerson, that has all to do -- I say that firemen who are not in your service less than one year have had training instruction and if they have been longer in your service have written examinations with regard to diesel engines and with regard to air brake equipment?

A No, I do not think I could accept it on that basis, Mr. Lewis. Again, you have to go back to the purpose of this examination, which was the qualification of firemen to become enginemen; the stipulation between the organization and the company that the examination could be taken at these periods in order to determine whether a man was, let me say, unable to become an engineman by reason of his inability to pass the examinations. This was a protection for the men, if I could put it that way, not the company. In other

words, a man would have the right to stand for examination after this period of time but the company, so far as it was concerned, did not require a man to take examinations because what we were looking for was his qualification as an engineman and that is what the examination did.

Q I got a little lost. I am suggesting to you that all firemen now in your employ, with the exception of those who have been in your employ less than one year, are likely to have had -- I am trying to put it in a way in which we can agree -- training and to have taken examinations in accordance with their length of service with regard to diesel engines as well as air-brake equipment; that is true?

A No, I cannot agree with you because if you look again at Sheet 2 of the white sheets attached to Exhibit 147 you will see that the first examination on air-brake equipment, MP-530, comes in the second series of examinations and that does not occur until after a man has had two years of service.

Q Perhaps I did not make myself clear, and if I did not I am sorry. I was trying to telescope all your employees without going through it step by step. I am suggesting to you that as a result of all this that we have discussed, all your employees with the exception of those employed by you for less than one year are likely to have had some training, depending on their length of service, and are likely to have written one or more mechanical examinations, depending on

their length of service, with regard both to diesel units and air-brakes, depending on their length of service?

A Well, I have to disagree with you on that on two bases, because you limit it to employees with less than one year.

THE CHAIRMAN: He excludes employees with less than one year.

THE WITNESS: Yes, sir. I am taking the employee who has had one year and one day of service, or one year and six months, or one year and eleven months; I do not care where you put it in.

BY THE CHAIRMAN:

Q Or three years?

A No, and I have reason for stopping short of two years because he is not required to take -- he does not stand for his second series examination, which includes air-brake equipment, until after two years.

There is another point to it also and that is this, and I will come back to it again: the purpose of the series of examinations set out in this way was to enable a man to stand for qualification as an engineman after stipulated periods so that he would not end up in a dead end street as it were.

But I am informed that in some areas at least -- I do not know how extensive

this has been, but I should judge it to be in general practice -- men are not written up on examinations until periods substantially longer than what is indicated here because there are sufficient men qualified written up and passed as enginemen to man all assignments existing and to keep an adequate supply on the spare board. Therefore there is no need to write up firemen. This is a minimum period. That is what I am talking about.

BY MR. LEWIS:

Q I will put it to you again step by step instead of trying to shorten it unsuccessfully. In view of our discussion would you not agree that in most cases firemen who have been in your employ more than one year and less than two years are likely to have obtained the training necessary to write the first series of progressive mechanical examinations, and to have written them?

A No, I cannot agree with it on the basis of "most" and I cannot agree with it on the basis of "likely."

Q Do you have information that that has not been the practice with men between one and two years, that they have in most cases not written the first series?

A No, I have not information of that kind.

Q Have not you information that in most cases they do write it within one and two years' service?

A No, I have not that either.

Q You have not it either way?

A Yes, that is right.

Q You are not disagreeing with me, you are just saying you have not the information?

A I cannot agree with you without the information.

Q Well, I can spend an interesting hour or so in a discussion of semantics, but I am just putting to you what you are saying. You have no information on that matter, that is what you are now saying?

A I am saying I cannot agree with you that most of them will have taken it.

Q Because as you say you have no information either way?

A And because I know there have been exceptions. How widespread those exceptions are, that becomes a detailed matter.

Q Then let us go one year further. Can you agree that those firemen who have been in your service more than two years and less than three years, that most of them are likely to have written and to have been trained for the first series of the progressive mechanical examinations?

A No, I cannot agree with that either.

Q You have --

A On the same basis.

Q You have noticed exceptions of that where you have kept the firemen without requiring them to write their first series of progressive mechanical examinations up to three years; is that what you are saying?

A That there have been men who have not stood for their examinations at the end of two years.

Q For their first; I am talking about the first series.

A I am sorry, I thought you were speaking about the second series.

Q No, I was not. I just took the first series one year further.

A Oh.

Q Would you agree with me that most of the firemen who have been in your employ for more than two and less than three years will have had training and be ready to write the first series?

A I do not know. To determine that I would only be guessing, and I certainly do not want to do that. Without the information I can neither agree nor disagree.

BY THE CHAIRMAN:

Q Where do you get your firemen?

A Some of the firemen come from the shop staff, shop labourers, and many firemen will be taken off the street, as it were.

Q In the case of a shop man, how long do you require him to have been in the shop before you would take him on as a fireman?

A There is no qualification, there is no period stipulated as to that.

Q Then if you take a man off the street?

A Well, he merely goes through the program that was outlined by Mr. O'Brien.

Q Then you get him into the cab of an engine as fireman?

A Yes.

Q How long could he stay there without writing his first examination without complaint on the company's part?

A I do not think there is any maximum period limitation.

Q No, but how long would you say the company would be willing to retain him as a fireman if he did not write?

A I am sorry, I cannot say.

BY MR. LEWIS:

Q Do you know whether the company does complain when a man goes on too long after his first year of service without writing the first series?

A That is a detail I am not familiar with. I expect there have been cases in which that has taken place, either the first or second or third series.

Q It would be a matter of local supervision?

A That is right.

Q Turning now to another point. Yesterday you were talking about emptying the air box drain. I have not had time to look at the transcript which arrived this morning, but you said something about that being the responsibility of the maintenance staff, and then you quoted from some instructions?

A Yes.

Q What instructions were they?

A Well, those were --

MR. SINCLAIR: I took them back; they were out of my book.

THE WITNESS: This is the maintenance schedule for trip inspections of General Motors diesels issued by the Chief of Motive Power and Rolling Stock to the mechanical staffs across the system. It contains a list of items that are to be checked on each trip inspection, with provision for the initials of the person who has checked them and the signature of the locomotive foreman at the bottom. This is

Form D.L-40, sheet 1 of three. Item 2 under "Engine" states "open air box drain valves."

BY MR. LEWIS:

Q Are there also instructions to close them before the unit is taken off the shop track or wherever it is when it is being serviced?

A Well, I think the intent in the writing of this form was to open and close.

Q There are not any instructions with reference to closing?

A No. I think they left it to the intelligence of the man, that having opened it and drained it, he would close it.

Q You mean he would watch it drain, or see to it that it was drained, and then close it?

A Yes.

Q The reason I am asking you that is that I am instructed that except when the engineer and fireman are a little negligent, the opening of the valve on this air box drain is done regularly by the fireman before he leaves the engine, not necessarily to close it but open it?

A I cannot say how regular it is. I heard Mr. Hooley mention it. If it is, I certainly wish they would not do it because so far as I am concerned it is not part of their duties. I would

rather they stayed away from it because it starts to open up the question of tinkering with a diesel engine.

Q You mean the opening of the valve of the air box drain is tinkering with a diesel engine?

A Yes.

Q What is the date of that bulletin, Mr. Emerson?

A This is dated July 1954.

Q Has that been superseded?

A No, as far as I am aware this is still in effect.

Q It superseded a previous form of 1951. You had that same maintenance form all through the years?

A On diesels?

Q Well, first on diesels, yes.

A I think these forms have been progressively improved, as we gained experience with diesel equipment.

BY THE CHAIRMAN:

Q What is this form you are referring to?

A This form is --

MR. LEWIS: I did not know whether to suggest that it be filed if it is a private company matter.

THE WITNESS: Oh, no.

THE CHAIRMAN: I just want to understand it. It is secondary whether it is

filed or not.

THE WITNESS: This form constitutes a check list, if you will.

BY THE CHAIRMAN:

Q For whose observation is it?

A It is a form for the record of the mechanical officers of the work performed in the maintenance of a diesel unit at a specified trip inspection.

Q By the shop staff?

A This is entirely shop staff. It is a check list such as we have heard about in advertising recently for the maintenance of your automobile.

BY HON. MR. McLAURIN:

Q A trip inspection is made about every 2,000 miles?

A It could be less; it is variable; whenever the unit comes back to the maintenance base.

Q Then there is an overhaul every 6,000 miles, is that it?

A The next is the mileage inspection at 6,000 miles.

BY THE CHAIRMAN:

Q If you had those shop staff directions as long back as 1954 why was the fireman or engineman concerning themselves with that particular item?

A I know of no reason why they should.

THE CHAIRMAN: The only instance we have of it, Mr. Lewis, is on one trip report.

MR. LEWIS: Yes, I know, but I have been told it is done quite often.

BY MR. LEWIS:

Q Mr. Emerson, if my memory is correct --

MR. SINCLAIR: Just so that we will have this clear. Mr. Lewis says he has been told that it is done quite often -- where?

MR. LEWIS: On the C.P.R.

MR. SINCLAIR: In what part of the country?

MR. LEWIS: My friend will --

THE CHAIRMAN: He may have some evidence to offer.

MR. LEWIS: You will have a witness to ask that of.

MR. SINCLAIR: I just think that my friend should not give evidence.

BY HON. MR. McLAURIN:

Q May I interrupt, although I do not want to interrupt the line of your cross-examination. I think it is probably on record, but assume you start off with a unit, say from the shop in Winnipeg?

A Yes, sir.

Q It goes out to the coast and finally it is checked?

A Yes.

Q Is it just filled with oil at Vancouver?

A They check the unit.

Q Take a place like Alyth, what sort of place is that? Would they do trip inspections?

A You might very well have seen trip inspections and also mileage inspections. If I can run through them very briefly.

Q They do both there?

A Yes, sir. Alyth is a main maintenance base. There are a large number -- I have forgotten the exact number -- of diesel units which are assigned as being based on Alyth. I am speaking of units in road service.

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Q When would it come up for trip inspection
2,000 miles?

A Trip inspection is different from mileage
inspection in that it is not at a stipulated
mileage interval. A locomotive unit goes out
to say Moose Jaw in freight service and maybe
is taken off at Moose Jaw and comes back into
Alyth, and when it is in there the staff will
give it a trip inspection which is this type
of thing. It is a relatively simple inspec-
tion.

Q A trip might be 800 miles or 1,000 miles?

A It could be.

Q It is fairly rapid?

A It is fairly rapid. It comes back in and it is
given a trip inspection.

Q They were working on generators so that would
be a mileage inspection?

A Work on the generator would be a mileage inspec-
tion and probably a fairly high mileage inspec-
tion.

Q Six thousand miles?

A Six thousand miles is the first mileage cycle.

Q That is done there?

A Yes.

Q When I had got my elementary education and had
not been too bright a pupil they said, "We will
take you out to Ogden," and I said, "I will get
confused." What do they do out there?

A Well, to run through it very quickly, and this

is simplifying it quickly, the next mileage cycle is based on 30,000 miles in freight service and 60,000 miles in passenger service. What I am saying is that the 6,000 cycle repeats. Then you come to the 30,000 mile cycle in freight service and they give them more thorough servicing.

Q The only places are Ogden, Nelson, Chapleau and Montreal?

A No sir, not quite. Alyth, Nelson, Chapleau and St. Luc are similar.

Q I mean with respect to these big maintenance jobs, 60,000 miles, Nelson, Calgary, Chapleau, Montreal, when you overhaul --

A Sir?

Q When you overhaul at 60,000 miles?

A Sixty thousand miles is not an overhaul of a diesel unit. You have to go to higher mileages than that, sir. You go through the 60,000 mile cycle, the 30,000.

Q When you put a lame duck in Ogden or Nelson or Chapleau or Weston, what is wrong with it?

A That then is a very high mileage inspection maybe 480,000 miles, something like that, or 240,000.

Q That is the only kind of thing that goes into Ogden?

A Unless there is a unit which has been damaged or inadvertent --

Q Now, how many Alyths have you for trip and

mileage inspections?

A Well you have Alyth --

Q Start from Vancouver?

A Alyth, Nelson, Chapleau and St. Luc.

Q Have you got one in Winni g? Do you not do that in Winnipeg?

A No, I think all units are cycled back to Alyth at the present time. They may be doing some on a limited basis there.

Q Vancouver?

A Vancouver, no, not other than the units in yard service.

Q For western Canada, trip and mileage inspections are pretty well handled at Alyth?

A Pretty well handled at Alyth and Nelson.

Q And between Toronto and Winnipeg at Chap

A Chapleau, and at Montreal, St. Luc.

Q I am sorry to have taken this time. I am sorry to have interrupted.

MR. LEWIS: Not at all.

BY MR. LEWIS:

Q Then you have shops like the Ogden shops?

A Ogden and Angus.

Q Angus in Montreal?

A Yes.

Q And that is for major rebuilding of the parts?

A Major overhaul.

HON. MR. McLAURIN: I should have said Angus. Weston is in Winnipeg.

THE WITNESS: Weston is in Winnipeg.

MR. SINCLAIR: If my friend will permit me, I think we have left out one and perhaps we should have it here. Three types have been mentioned, turnaround, trip and mileage and I think that you have talked about mileage and trip. Possibly you had in mind what we were talking about with Mr. Woodland, what he termed turnaround inspections. There were three kinds.

BY MR. LEWIS:

Q Now, you have also said that you did not desire the engine crew to do anything around a diesel engine because you did not want them to tinker with it and you said that tinkering has had undesirable results or words to that effect?

A Yes.

Q That statement is based on some information, is it, Mr. Emerson?

A That is based on our experience. As an example, I will give you this instance. This was an occurrence on which train 6 on March 20th of this year stopped at mile 47, Swift Current subdivision, which is just west of Secretan, two diesel units, and they were 4034, 8519 --

Q An "A" unit and a road switcher?

A Right, account of these units cutting out. The train was delayed three hours and 40 minutes and in order to get it into Swift Current we had to send a steam engine out to take it in. Now, that is the background. Here is my report on the investigation.

Q You say "your report". It is a report sent to you?

A Yes. Investigation disclosed when train approaching mile 48 a ground relay tripped on leading unit 4034 resulting in unit failing to load. Because load meter showed unit not loading engineman Kossick shut off throttle and while drifting to a stop sent fireman, E. Fedorwich, to check unit. The fireman did not check or reset ground relay which he should have done and should have been instructed by Kossick to do. The fireman considered overspeeds had tripped on both engines. However, as both engines still running at this time this could not have been the case. If ground relay had been reset units would have operated normally. Fireman endeavoured move overspeed reset levers on both units in clockwise direction instead of counter-clockwise direction resulting in shearing taper pins in overspeed shafts. This resulted in both engines shutting down for lack of fuel.

(2)

Unit 4034 could not be restarted because taper pins in lock trip pawl and lever stop broken. It was possible to start unit 8519 but would not continue running due to taper pin in lock trip pawl broken preventing lever from remaining in reset position thereby shutting down due to

lack of fuel.

If engineman Kossick had checked units he would have found ground relay tripped on 4034 but regardless of this from investigation it is evident unit 8519 was operating satisfactorily before mechanism damaged by fireman and train could have been handled to Moose Jaw by unit 8519 if unable locate trouble on unit 4034.

Fireman Fedorwich has limited experience in diesel electric locomotives as has been operating as engineman in yard service for past 16 months but had worked as fireman on passenger diesels prior to this. Engineman Kossick responsible for failing to properly locate trouble or take action himself.

Q What does that prove with regard to tinkering?

A Well, it just proved to me that somebody going back onto the unit that did not know what they were doing made what might have been a very slight delay or no delay at all -- turned it into a very heavy one.

Q Let us take that step by step, Mr. Emerson, with the very little education I have and the much more you have in these matters. If the ground relay trips there is a certain kind of alarm, is there not?

A Yes, there is a ground relay alarm, yes.

Q And that alarm indicates what to the crew that knows about it as it should, that it is a ground relay and not an overspeed? Is that right?

A That is right.

Q So that what that proves is that this particular engineman and/or this particular fireman did not know a ground relay alarm from an overspeed alarm?

A That is right.

Q That is all it proves?

A It proves that.

Q Because if he had known the difference, as you expect the engineman and the fireman on the diesel to know, he would have reset the ground relay gimmick, whatever it is?

A As you expect the engineman to know, yes.

Q And do you not now expect the fireman to know?

A No. He acts on instructions of the engineman.

Q Mr. Emerson, the engineman sees in the cab a ground relay alarm?

A Yes.

Q Or sees and hears it?

A Yes.

Q He says to the fireman, "Go back and reset the ground relay"?

A Yes.

Q Does the fireman not have to know where to go and what to do and do you not expect him to?

A The engineman instructs him to go back. If the fireman does not know what to do, if he is

unfamiliar, the engineman should have explained it to him.

Q If he is unfamiliar?

A Yes, sir.

Q And in that report which you read to the Commission, Mr. Emerson, what is the significance of the statement about this fireman having had -- I have not seen it and I am just recalling it from what you read and am not quoting -- limited experience, because he had been 16 months in the yard?

A You are quite right, but had worked as a fireman on passenger diesels prior to this.

Q What is the significance of all that information to you unless it is to say he should have known and you expect him to know?

A No, that he would not necessarily know. He had had some experience but he did not know.

Q I am not saying necessarily know; I am suggesting to you that the only meaning of that information given to you is to point up the fact that your officer expected him to know better?

A No, I don't think I would agree with that. It pointed up why he would not know better. It pointed up perhaps the error of the fireman in going to the overspeed instead of to the ground relay. It pointed up the error which he made in carrying out the instructions of the engineman. Of course, he went further. When he got to the overspeed reset he not only endeavoured

to move it, which was wrong because it did not require to be reset, but he forced it and then he sheared the pins in the shaft and that resulted in both units, not only one unit but both units failing, and then we had to send for a steam engine.

BY THE CHAIRMAN:

Q That is the question I had in my mind. If, as a matter of fact, the engineman and the fireman had properly interpreted the alarm and if it had been an engine overspeed alarm and the engineman had sent the fireman back, would what the fireman did under those circumstances have been the correct procedure?

A If it had been an engine overspeed alarm?

Q Yes?

A Except for the fact that he turned the reset the wrong way.

Q Then it was inappropriate?

A Yes, sir.

BY MR. LEWIS:

Q He turned it the wrong way?

A Yes, endeavoured to turn it the wrong way and sheared the pins.

BY THE CHAIRMAN:

Q If it had been an engine overspeed alarm, it would have been a case of resetting the apparatus, whatever it was?

A Yes, the overspeed reset.

Q But what the fireman did was not to reset anything because it did not require resetting?

A No, let me go back to this, sir. The alarm was a ground relay.

Q In fact?

A Yes, in fact; on one unit.

Q Yes?

A The fireman went back and moved the overspeed resets on both units.

Q Oh, he moved the resets; yes?

A In the wrong direction; sheared the pins and put the units out of commission.

BY MR. LEWIS:

Q So that even if it had been an overspeed alarm and even if it had been in both units he would still have been doing it wrongly because he was turning it in the wrong direction?

A Unless there was this about it-- and I cannot say -- that perhaps if the overspeeds had not tripped it would have been obvious to him which

direction he should have moved to reset it.

BY THE CHAIRMAN:

Q He would not have moved it in the wrong direction?

A No.

BY HON. MR. McLAURIN:

Q It was pretty stupid, wasn't it?

A I thought so.

Q Was this fellow once the co-pilot of a passenger train?

MR. LEWIS: Apparently.

HON. MR. McLAURIN: He was pretty dangerous to have there.

MR. LEWIS: And apparently they intend to keep him there.

THE WITNESS: I am very sensitive about this, Mr. Lewis, and I want to give you one more example because I feel very strongly about this matter.

BY THE CHAIRMAN:

Q That is, concerning tinkering?

A Yes sir. Now, this was a case of train No.528 on December 30, 1956.

BY MR. LEWIS:

Q Is that a passenger train?

A Yes, it is a passenger train between Calgary and Edmonton. It had units 1434 and 1433.

Q Excuse me for interrupting again but the other instance was also a passenger train, was it not? Train No.6?

A Yes. This involved train No.528 with units 1434 and 1433.

BY THE CHAIRMAN:

Q What kind of units?

A A units, carbody type, sir. There were two A units back to back. It developed engine trouble after leaving Red Deer and both units stopped working at Innisfail. They took two units off another train -- off a freight train actually -- to handle train No.528 to Calgary and it was delayed two hours.

Now, interrogation of the engine crew revealed that approaching Innisfail intermittent wheel slip light being received and diesel helper considered wheel slip relay sticking. He secured flag staff -- that is a staff on the flagging equipment; a piece of wood about that long (witness gestures with hand) -- and opened electrical cabinet; then, using flag staff tapped equipment. In doing so, contacted manual operating button of braking contactors, closing contactors, resulting in ground relay action and shut down of engine when throttle moved through positions six and five.

Stop was made to pick up flag. There was a flagman out. Account saw by number 987 at Innisfail.

An attempt was made to restart the engine without success and while endeavouring to start the engine smoke appeared from electrical locker and battery switch was opened to avoid further damage.

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Jumper cables then taken down between units and train moved to Innisfail station using trailing unit and arrangements made to doublehead trains with units off No.987. Diesel helper R.Gray is regularly assigned trains 527 and 528 and realizes his error.

Now, that is what I mean by tinkering.

Q If I may make this a comment, Mr.Chairman, rather than^a/question, I think this second example you have given, Mr.Emerson, is one that I would understand you to mean. Is this not true -- you are saying that neither the engineer nor the helper should at any time open the electrical cabinet and start using a stick of wood in it?

A They certainly should not. As a matter of fact, I have personally under consideration the advisability of sealing the electrical cabinets so that no one other than authorized maintenance staffs can secure access to them.

Q What has been discussed in this proceeding, Mr.Emerson -- and I would like you to say how you relate your word "tinkering" to it -- what has been discussed in this proceeding is a field of assistance that might be given by some one relating (a) to the four protective devices which you have mentioned, and (b) to some other of the things which I drew to your attention this morning -- and to the attention of other witnesses -- in those fields

your term "tinkering" would surely not apply?

A Acting on the instructions of the engineman in respect of those items and assuming the man inside knew what he was to do, I would say no, that would not be tinkering. But, when, as in one instance, he turned the shafts in the wrong direction and deliberately forced them and broke the taper pins, then that to me is getting into "tinkering".

Q And if the fireman did not know what he was doing and did not receive the right instructions in the fields I have referred to, then I suppose that would be the equivalent of one of your maintenance men occasionally not knowing what he was doing -- I suppose there are such instances?

A Yes.

Q I suppose even your maintenance staff is sometimes capable of that?

A Oh yes, it is possible.

Q And I suppose the staff is capable of making that kind of mistake?

A I suppose so, but I would hope that none of them would go so far as to force a mechanism to the point that they would shear off the pin that secured it. That requires bull strength.

MR. LEWIS: I am not going to make any suggestions which impinge on their excellence at all, Mr.Emerson, and at this point, Mr.Chairman, in view

R.A.Emerson

of the heat in this room, perhaps we could have a short break.

THE CHAIRMAN: Yes.

-- The Commission took recess.

--- After Recess.

BY MR. LEWIS:

Q In Exhibit 185, Mr. Emerson -- I am not going to refer to it in detail so I do not think you will need it -- you said on page -- I think it was your trip reports, and just out of curiosity, was Mr. Koster with you on those trips?

A Yes, he did not ride in the engine cab all of the time I did. There may have been times when he was in the cab when I was not, but they were the same trips.

Q They were the same trips?

A The same movements.

Q And you and he were there together?

A Yes.

Q Now, Exhibit 163, your attention was drawn to the defects shown in the Board of Transport Commissioners' reports in 1954 and 1955 respectively in respect of the C.P.R. motive power, diesel motive power. Do you know whether there was any difference in the mode of inspection in 1954 than the one used in 1955?

A No, I cannot say that. I must surmise that the Board's inspectors, becoming increasingly familiar, if you like, with diesel equipment, are probably looking sharper, harder, and for more things as the years go by.

Q Take it step by step. Again, you would agree that the basis of their inspection, as it were,

was likely the same in 1955 as in 1954?

A I do not know of any change, Mr. Lewis.

Q You are suggesting that the increase in the number of defects in 1955 as against 1954 would be due to the Board inspectors becoming more alert in finding them rather than in the number of them having increased, is that it?

A I am suggesting that is one factor.

Q I understood you to say yesterday that you deny the possibility of age affecting the number of defects?

A Yes.

Q The age of diesel units affecting the number of defects?

A Yes.

Q You have reason to believe they remain just as good no matter what age your diesel units may be?

A In so far as any of the diesel units we have, certainly, yes, within the limits of the age of the equipment we have, and when they get to the point where it is not economic to maintain them in service, they will be withdrawn.

Q But until they get to that point are they not likely to suffer some by the normal wear and tear of age and use?

A No, I do not think so, not under our maintenance practice which is repair them and replace components at cycles. As a matter of fact, as I think I indicated yesterday, our experience

has been quite the reverse. Some of our difficulties develop when the units are just placed in service. As I say, they work out the bugs just as you do with a new car.

Exhibit 163 contains an excellent example of that under Item 5, lights. You will see none in 1954 and 24 in 1955. In the year 1955, with one particular type of unit we had a classification lamp device on it, that is the device in the nose of the unit that permits the classification lamp to be turned green or white as the case may be. It was secured by a pin and the pin was a faulty device in that it was not secure. There was a tendency for these lamps to work out of position or get in a wrong position. We cured that, but that is an example of what I mean.

Q Suppose you take Item 49, defects in internal combustion engines from 31 to 51?

A Yes.

Q Would I, as a layman, be wrong if I surmised that might easily be due to longer use of the same engine?

A Yes, I think that would be an erroneous conclusion, Mr. Lewis. I could not accept that.

Q You mean the age and use of the engine would have no effect on the internal combustion mechanism?

A No, not in the cycle of maintenance, no.

Q Take No. 59, fuel supplies; I imagine that means fuel supply system?

A I would think so.

Q That increased from 9 to 20. Would I be wrong, in surmising as a layman, that would be due to longer use of the engine that defects occurred in the fuel supply system as a result of that?

A No, I do not think I could relate that to the age of the unit. For example, in 1955 under this, 20 defects, one of them is that the emergency fuel valve was not marked. Now, the emergency fuel valve in these units is just an emergency shut-off. Apparently this one, when it came out from the manufacturer, was not marked and so the Board booked it as a defect.

Q Let us look at this again. On page 2 of the 1954 summary and page 4 of the Exhibit, which is the second page of the 1955 summary?

A Yes.

Q Looking at page 4 we find a pipe leaking; dirty fuel tank; eight fuel tanks leaking; six shut-off valve covers too tight -- all those things like leaks in the fuel tank, leaks in the pipe and the dirty fuel tank, would those things not be affected by age and by use?

A No, I would not think so. The dirty fuel tank is not related to use, particularly.

Q It could happen any time, I suppose?

A It is just a question of the accumulation of dust on top of the tank.

Q But that accumulation would be more and more as time passed?

A If you put a unit in service and did not clean the top of the fuel tank for 20 years there would be more dust on it than if you put one in and did not clean it for one year, that is right, yes.

Q What about the eight fuel tank leaks?

A Well, I have not particulars of them, of course, but that does not indicate age to me, necessarily. We have occasions in different territories where sometimes a rock comes down and is contacted by the fuel tank, will puncture it or spring it a little bit and make a leak; that is rather inconsequential.

Q Age would not affect that?

A No, I would not think so.

Q The susceptibility of a tank to spring a leak when hit by a rock would not be increased after four years or ten years service?

A I would not think you could determine any difference in it whatever.

HON. MR. McLAURIN: You might as well accept the one-hoss shay philosophy; it is one of those things that is going to collapse all at once.

BY HON. MR. MARTINEAU:

Q What makes you decide to get rid of an engine?

A We have not reached that point yet, except in one instance of a unit which was damaged in a mishap.

Q But what do you think would make you decide to get rid of an engine when it got quite old?

A What will make us decide will be the availability of a new engine, and when I say "new" I mean new in manufacture, carrying perhaps some improvement which will be more economical to operate and maintain and will justify our scrapping the old unit and making a deal for the new one.

Q Do you pretend that these engines can go on forever without causing you any trouble?

A No.

Q Increasing trouble as they get older, like all mechanical devices?

A Increasing trouble, yes. We have no reason to anticipate increasing trouble. The procedure in the maintenance of this equipment is that high mileage inspections take them into a main shop where they take out the diesel engine and put in another one; take out the generator and put in another one; replace different components. In effect you have an assembly of different components, new components, either new or rebuilt. There is no reason why they should not be just as efficient and just as effective as the original components.

BY HON. MR. McLAURIN:

Q Obsolescence is your enemy in operation?

A Absolutely.

Q Depreciation is your friend when you pay taxes?

A That is a very trite way of putting it.

MR. SINCLAIR: It depends on who fixes the rate of depreciation.

BY MR. LEWIS:

Q I do not know whether to pursue this

very much further. A diesel engine vibrates when in motion?

A Oh, yes, it is not a vibrationless machine.

Q It vibrates?

A Yes.

Q And vibration would have some effect on the parts, wear some of them thin; it would affect some of them?

A Well, that is one of the things that is taken care of by this periodic replacement I spoke of.

Q You gave some examples yesterday of some of the safety mechanisms and devices and what not which the Canadian Pacific has introduced of its own initiative?

A Yes, I think I said of its own initiative or at the suggestion of other parties, but without being required to do so.

Q By the board?

A Quite.

Q When you said at the suggestion of other parties, am I right in thinking it was the suggestion of one or other of the brotherhoods?

A That might include that, yes.

Q I do not want to belittle the steps which the Canadian Pacific may have taken, but are you suggesting that the introduction of the more efficient Mackie rail was

primarily for the purpose of safety, or was the matter of providing a more economical rail not a consideration?

A No, I would say that was entirely a question of safety.

Q The question of the maintenance of a rail that would develop that fissure you were talking about and the need for a Sperry car to test it and all that, that was not taken into account at all, it was merely a question of safety?

A It is hard to draw a very precise line. Take the Mackie rail and a non-Mackie rail, ultimately, for whatever the odds are, the non-Mackie rail may fail due to fissures, and the Mackie rail will not. To that extent you get a longer life out of the Mackie rail. You are thus relieved of the possibility of failure and any mishap that might occur from a failure.

BY THE CHAIRMAN:

Q When you mentioned this before, the introduction of the Mackie rail and the introduction of the Sperry car, I assumed that they were separated by quite a length of time?

A No, actually they occurred, while not coincidentally -- the Sperry car I think was about 1929.

BY MR. LEWIS:

Q Was that before or after the Mackie rail?

A That was just before, as I recall it, yes.

Q That was for the purpose of detecting defects in the non-Mackie rail?

A That is correct.

Q The Sperry car?

A That is the purpose for which it was devised.

Q You do not use that car on the Mackie rail?

A No, that is right.

Q You do not need to?

A Up to now we have not had to.

Q Similarly with regard to the switch point lock. Was there not a question of efficiency from the point of view of cost and saving time and so on involved in that decision?

A No. As far as I can see it was purely an added cost and I do not see that they saved any time. Actually they take a few seconds longer.

Q But there would be the elimination of affairs which might have entailed a cost, as well as safety?

A You are thinking of saving the cost of affairs?

Q Yes.

A Yes.

Q I am wondering if that was not a consideration?

A I am hoping that when you save an affair you save cost.

Q Again not wishing to belittle, I just want to be sure that this is in its perspective -- next is the replacement of timber bridges with steel bridges?

A Yes.

Q Would that be entirely a matter of safety or would it be safety combined with more reliable performance? Let me put it in that broad sense.

A Well, they are not all either black or white. There are some instances in which the replacement of a timber bridge by a steel bridge is economical, that is to say with the increased life of the steel bridge which makes it worth while to make the additional investment which its construction entails.

On the other hand, we have had a number of instances in which on the basis of economics we should have perpetuated timber bridges, but steel or another permanent form of replacement was used because of the elimination of fire hazards and other risks which are present in timber bridges.

Q Do you have any timber bridges still?

A Oh, yes.

Q Why have not you changed them too?

A It is a question of cost.

Q That is what I thought.

A May I put it another way. The resources of the company are like those of most individuals, they are not unlimited. You cannot do everything at once.

Q You told us about the safety program the Canadian Pacific introduced, if my memory serves me aright, or a new safety program I should say which the Canadian Pacific introduced in 1944 by the setting up of a central bureau?

A Yes.

Q You had a safety program before that, I would assume?

A Not a safety program in the terms in which I have outlined it. As I say, safety has always been the responsibility and concern of the company, but this was action taken to promote safety, or let me say to give it added emphasis.

Q You do not contend that between 1880 and 1944 your company was not thinking of safety, but what I am suggesting is that the real distinction was that you introduced a centralized promotion of safety by a central bureau whereas formerly you had relied entirely on local supervision

to promote it?

A No, I do not think I can take it quite on that basis. The responsibility for dealing with safety rests with the local supervision, but here was supervision which reinforced the local officers with material and means to enable them to give added emphasis to the safety of the employees under their jurisdiction.

Q Do you know whether your bureau and your advance in safety did not coincide roughly with a general safety movement in all industry on this continent?

A Well, if you will turn to Exhibit 188 I think you will find that indicates that over a period of years as shown the Canadian Pacific has not lagged behind; in fact I think that it was ahead of the general progress of other industries as shown on that list.

Q I have not made any exact calculation any more than you have, but the striking thing to me about Exhibit 188 when I looked at it last night was that as far as the instances you give there was some improvement, in some instances a considerable improvement in other industries as well as the C.P.R.?

A Yes, I think I would say that, but there is a general trend toward increased

safety consciousness. We do not claim it as unique.

Q I was just going on to say that you would perhaps agree with me, would you not, that since the end of the depression, more particularly since the end of World War II there has been a very considerable safety movement, a safety promotion movement on this continent? I refer to this continent because I do not know what has happened on any other.

A I think I would not disagree with that.

BY THE CHAIRMAN:

Q I suppose if you want to put it on a purely selfish basis, it saves money?

A In one sense it does. It brings about decreased compensation payments and that type of thing.

Q Does the railroad pay its own compensation or is it paid out of a fund?

A No, generally we pay our own compensation based on the assessments set by the various boards.

BY MR. LEWIS:

Q There is a saving in man hours and equipment and all those things in a successful safety program, in your industry as in other industries?

A That could cut both ways. Sometimes the adoption of safety measures may mean

taking the long way around and that sort of thing, which involves more man hours.

Q In a particular case one might agree with you, but would you not agree that there is a saving in man hours if there is no accident, or illness resulting from it, or no destruction of property resulting from it?

A No, I do not think I can just agree with that offhand, but in any event it is immaterial as far as I am concerned because we have a safety program and we are behind it.

Q On this subject of safety you said that in your opinion the removal of the fireman -- I am not quoting you -- would improve the situation, and you gave two reasons for that. The first was that it would remove the division of responsibility, and the second was that it would remove the possibility of distraction?

A Yes.

Q Is that a fair summary?

A Also it would require the men of the yard crew to position themselves properly.

Q I take it that that would flow from the elimination of the division of responsibility?

A Well, I think I would rather set them out in three separate categories.

Q On this division of responsibility, Mr. Emerson, I suppose that is just a priori; in other words, on your part you have no evidence to show that the division of responsibility, as you call it, has been a serious defect?

A Here is an instance which is very fresh in my mind. It occurred on Sunday, May 5, in the Regina yard.

BY MR. SINCLAIR:

Q This year?

A This year. This is the way the message reads:

"At 21.55 k. yesterday, Regina yard, yard engine 6532 had shoved eastward through depot track 6 with three piggy-backs and placed them in centre siding. Westward move then made through depot track 6 with light unit headed west with foreman and engine follower riding rear steps of diesel unit while moving approximately 5 miles per hour. The fireman shouted warning to engineman that CN equipment from train 66 track 5 was moving westward. Engineman Bell applied independent brake but unable to stop before contacting side baggage car, third car of cut being handled by CN yard

"engine. Baggage car on rails but tilted sideways to south approximately 15 degrees. Unit had leading wheels front truck derailed and rear truck completely derailed."

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That is the gist of it. That to me is a timely and excellent example of just what I have in mind. To picture this situation, I would describe it this way. You have two tracks, one on the left and one on the right.

BY THE CHAIRMAN:

Q Which is which?

A On the left-hand side there is this C.N. train, a cut of C.N. equipment with a yard engine on the head end or west end of it. On the right-hand track there is the C.P. yard diesel headed west and moving west with the engineman on the right-hand side away from the C.N. train, the fireman on the left-hand side adjacent to the C.N. train and two members of the yard crew on the trailing footboard behind the engineman and the fireman. Now, there is a rule violation involved, of course, in the fact that this engine went down and continued to move --

BY MR. LEWIS:

Q That is the C.P.R. engine?

A Yes, went down and moved foul of the track on which the C.N. train was moving without the switch for that movement being properly aligned. That is the seventh paragraph of Rule 104, Exhibit 27.

Q If I may interrupt you, what you have described now would seem to suggest that the two tracks were parallel. There must have been a cross-over if they were to come into contact?

A The two tracks were parallel and then converged at the end. Track No. 6 turns into Track No. 5. I am sorry I did not make that clear. It was what we call a sideswipe.

Now then, we had the engineman on the right-hand side, the fireman on the left-hand side right adjacent to the C.N.R. equipment, could see the switch and the turn and he took no action until it was too late. He called a warning and then it was too late and the engineman applied the brake in emergency and the contact was made.

Now, I will give you the alternative. Suppose there had been no fireman on that engine. The engineman on the right-hand side could then have moved only on the instructions, signals, of the yard crew who, instead of riding the trailing footboard, would have necessarily positioned themselves on the front of the engine.

BY THE CHAIRMAN:

Q Would have and should have?

A Yes, sir. The engineman could not have been relying on the fireman and I say this accident could not have happened.

BY MR. LEWIS:

Q Are you not jumping a step? Perhaps you have got some more information, but ^{what} is there in the report you have read that justifies the conclusion you appear to be drawing that the

engineman moved without having received a proceed signal from the ground crew?

A Because the ground crew, two members of the ground crew, were riding the trailing foot-board. Now, the fact that they might have been some place else is one thing, but what I am saying to you is that in those conditions the engineman moved ahead relying on the fireman to keep a look-out on the left-hand side.

Q And if the fireman were not there, Mr. Emerson, he would still be relying on a member of the ground crew to keep a look-out?

A Precisely, and the member of the ground crew would have been as he should have up on the point of the engine where he could give a signal and where he could see.

Q What I cannot understand from the example you have given is your general statement that you would have less division of responsibility if the engineman relied on a man riding the front steps, the front left steps, say, of the engine instead of riding the back steps?

A I would say the front right.

Q The front right?

A Yes.

Q On the engineer's side?

A Yes, on the engineman's side, surely.

Q How would he be able to see this movement which I think you told us was on the left side?

A It was on a parallel track and he could easily look across the front of the engine and see something that is 14 or 15 feet away.

BY THE CHAIRMAN:

Q Was the C.P.R. light engine proposing to continue on the track which would converge with the C.N.R. movement or was it intending to continue on parallel to the C.N.R. movement?

A No, it was intending and did continue on to the track that converged with the C.N.R. movement and that is where it contacted the C.N.R. train.

BY MR. LEWIS:

Q But I just do not follow where you get from what you have read information to lead you to the conclusion you draw from what you have read. Which way was the C.P.R. engine going?

A Going west.

Q Cab first?

A No, engine first and cab behind.

Q Engine first and cab behind?

A Yes.

Q And where was this helper? Was he at the point of the movement of the engine?

A Which helper?

Q I am sorry, the yard foreman and the other member of the yard crew?

A The yard foreman and the other member of the crew were riding the trailing footboard.

Q That is the footboard --

A Behind the engineman.

Q Behind the cab?

A Behind the cab.

Q Closer to the engineman?

A Well, just outside his window.

Q And your point is one of them should have been riding the nose of the engine, as it were?

A Quite.

THE CHAIRMAN: What is the rule there? Is it Exhibit 127?

MR. SINCLAIR: Rule 104.

THE WITNESS: Rule 104, sir, yes.

MR. SINCLAIR: It is on page 61 of Exhibit 27, the seventh paragraph of that rule. That is the one that the witness referred to.

BY MR. LEWIS:

Q As I understand, the rule violation which you are suggesting, it was one relating to their not making certain that the switches were lined in the proper direction?

A Well, you see, one thing flows from the other. If the switch leading on to the track on which the C.N.R. movement was taking place had been properly lined for us the C.N.R. movement could not have been taking place on it. In other words, whichever train has the switch has the right of track.

BY THE CHAIRMAN:

Q The switch signal was against the Canadian Pacific Railway?

A Yes.

Q And if there had been a crew member on the front of the C.P.R. engine he should have seen that switch signal whether he saw the interfering movement of the C.N.R. train or not?

A Precisely, sir. In fact, it was his responsibility to stop the movement until he was certain that the switch was lined for the C.P.R. movement.

BY MR. LEWIS:

Q What reason do you have to assume that the ground crew had not made certain that the switch was lined and had not given the engineer the go ahead signal before he proceeded and that some one may not in the meantime have taken the switch from them, as I have heard it put?

A Quite right, but to go on, I told you that the yard foreman and the engine follower were on the trailing steps of the unit.

Q Yes.

A Having made, shoved some cars down a considerable distance to the east and then making a light movement back through track 6. In the meantime the field man had gone ahead and lined up two

switches ahead for a subsequent move.

BY THE CHAIRMAN:

Q For the subsequent move?

A Yes sir, but subsequent to that again the C.N. crew working on track 5 lined the switch for their movement. Having done so, they had the route. The route belonged to them.

BY MR. LEWIS:

Q And where was this division of responsibility? That is what I cannot understand?

A What I am saying to you is this, that the engineman who was on the righthand side of the engine, the two members of the ground crew behind him and the fireman on the lefthand side must have relied on the fireman to see that the route ahead was clear

Q After the proceed signal was given, you mean?

A What proceed signal are we at?

Q There must have been a proceed signal for the engine to move?

A Oh, what happened, if you go back far enough, is that after pushing, setting off the cars in what they call the centre track the yard crew, consisting of the foreman and the engine follower, got on the trailing steps and gave the proceed to the engineman and said, "Away you go."

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BY THE CHAIRMAN:

Q The field man had not gone down with that movement?

A No, the field man had not gone down with that movement.

BY MR. LEWIS:

Q Had the field man lined the switch some time earlier?

A Pardon?

Q Had the field man lined the switch to track No.6 some time earlier?

A Between five and six he had lined it, yes.

Q And he did not remain at the switch?

A No.

Q He went on?

A He went on.

Q And have you any other instances of this division of responsibility that you claim?

A Well, Mr. Lewis, this is one that comes to mind. Certainly there are other instances. I see them from time to time. I am sorry I have not got a card index in my mind to pull them out for you, but I can assure you there are others, numerous others. It is not just an opinion picked out of the air.

Q What about the ground crew of the C.N.R. train and the ground crew of the C.P.R. train working in the same yard co-operating with each other and protecting against each other?

A Nothing wrong with that.

Q That fell down in this case, did it?

A The falling down was the violation of the seventh paragraph of Rule 104.

Q But this protection of the ground crews one against the other -- we were told about it by some of your officers -- also fell down in this case?

A Well, I don't know to what specifically you have reference. To me this was a violation of the seventh paragraph of Rule 104. They failed to have the route.

THE CHAIRMAN: I think we will adjourn at this point.

-- The Commission adjourned at 4.00 p.m. until 10.00 a.m., Thursday, May 9, 1957.

BINDING SECT. APR 21 1972

